NEWSLETTER

No. 01-15 JUL 01

JOINT READINESS TRAINING CENTER

NCOs "MAKE IT HAPPEN"

JRTC OBSERVATIONS

Published by the CENTER FOR ARMY LESSONS LEARNED (CALL)
U.S. ARMY TRAINING AND DOCTRINE COMMAND (TRADOC)
FORT LEAVENWORTH, KS 66027-1350

FOREWORD

The Joint Readiness Training Center (JRTC) Operations Group is unique among the Combat Training Centers. We are staffed to provide highly trained, very experienced Observer/Controllers down to squad level, making JRTC the greatest single repository of light infantry experience within the U.S. Army. This is an important commitment by the Army's leadership. It recognizes the importance of the NCO Corps and the value of the infantry squad leader. The infantry squad leader/commander has the toughest job in the Army. He is the only leader responsible for both individual and collective training as well as unit mission accomplishment. With such talent at hand, JRTC is making a concerted and sustained effort to fully exploit that wealth of knowledge and experience.

The first half of that effort will be the establishment of a NCO trends reversal program. JRTC tracks a list of Battlefield Operating System (BOS) related trends developed from the 10 rotations each year. Preparing units to better meet the challenges demonstrated in those trends is the basis of the CTC Trends Reversal Program, yet we have noted that those trends focus on battalion or brigade planning and operations. The best plan artfully crafted by the Military Decision-Making Process leads to nothing without execution to standard by squads, platoons, and companies. These units are the foundation to the combined arms team effort at the battalion and brigade level. NCOs are the leaders and the trainers from team to platoon and are a critical link to execution of every task on the battlefield. Consequently, JRTC believes that the trends that interest NCOs are as important as those that interest battalion and brigade commanders.

The other measure underway to exploit the tactical knowledge resident in JRTC is development of tactics, techniques, and procedures (TTPs) to reverse those trends. The best source for those TTPs is our NCO Corps. They have the small unit experience and are the primary trainers for soldiers and junior NCOs. Those experiences and insights are valuable and should be exploited. We must encourage our NCOs to put their thoughts on paper and share their rich experience throughout our Army. This NCO newsletter is an effort to share the NCO experience at JRTC. Combat readiness is our business. Forge the Warrior Spirit!

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JOINT READINESS TRAINING CENTER
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CHAPTER 1

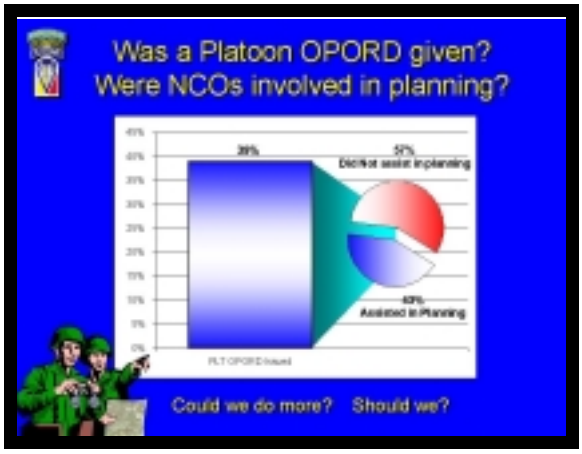
NCOs in Planning and Preparation for Battle

by SFC Robert J. Ehrlich

Like all well-executed contacts, the far ambush struck the platoon in the flank without warning. One soldier went down hard, obviously dead. Another screamed and fell, clutching a shattered knee. The platoon froze, transfixed by the shock and noise. Like the rest of his platoon, the lieutenant was stunned by their initial baptism of fire. He too was struck, taking him out of the fight. Yet instinct and battle drills took over, reinforced by untold rehearsals. The platoon sergeant moved forward to assume command, directing his senior squad leader to take over as platoon "Daddy." The newly designated platoon sergeant reacted by directing suppressive fire on the enemy. What had been the infantry equivalent to a "deer in the headlights" was soon a unit maneuvering to take the initiative away from its attackers under the guidance of its NCOs. They would continue the mission. After all, they had helped plan and rehearse the operation.

Such a reaction to combat and loss is the standard espoused at the Joint Readiness Training Center (JRTC). Yet it is often the exception rather than the rule. Part of the problem is simple lack of experience and hesitation. The problem is further exacerbated by the sad fact that tactical leaders, especially platoon leaders, fail to use the combined wisdom and experience of their NCOs in planning and preparing for combat operations. Considering that NCOs constitute 80 percent of the leadership structure within an infantry platoon, tactical planning and preparation must tap that pool of experience. Tactical leaders should address the following questions before they arrive at the JRTC.

Should NCOs participate in the planning and preparation for combat operations at the platoon level?



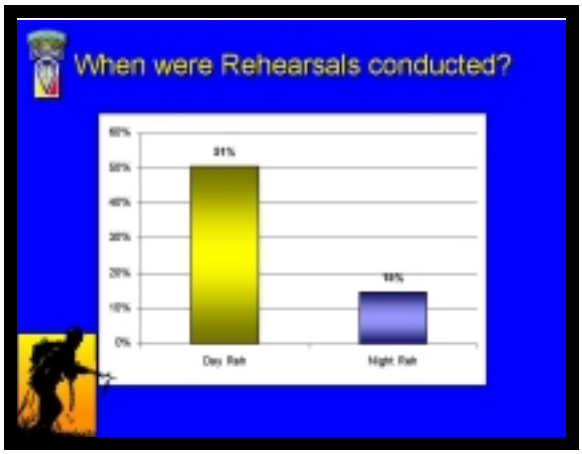
Yes. Ranger school teaches leaders (soldiers, NCOs, and officers) to be a productive part of the planning and preparation timeline. Likewise, the Primary Leadership Development Course teaches a class on combat orders. It is part of our doctrine to plan and prepare for operations, not to go into an operation unprepared or uninformed.

Only 39 percent of the time did platoons issue operations orders for their missions at the JRTC. Out of that 39 percent, NCOs were involved only 43 percent of the time. Therefore, out of 100 platoon missions, only 16 benefited from the experience embedded in 80 percent of the platoon's leadership in producing a platoon order.

Why are NCOs not more involved in the planning process when on a rotation at the Joint Readiness Training Center? The bottom line is that NCOs (especially platoon sergeants) are not stepping up to the plate by insisting that it is their duty to be involved. This leaves the platoon leader -- usually by this time mentally exhausted -- to plan the operation. At a minimum, the platoon sergeant should prepare and issue Paragraph 4 (Service Support) of the operations order. This paragraph covers the casualty evacuation (CASEVAC) plan that provides every soldier with the knowledge and confidence that they will be taken care of in the case of battlefield injury. Other parts of the planning process can be assigned by platoon standing operating procedures (SOP). The example checklist (Sample 1) on page 3 offers a few alternatives. Similar to tactics, techniques, and procedures (TTP), this is a suggested solution. There are others. One key benefit in getting NCOs involved is that it helps prepare them should they have to assume tactical command.

Are NCOs rehearsing their units before operations?

Now that the operations order is given, how did units do on conducting rehearsals? The answer is: Not very well!



Daylight rehearsals were conducted only 51 percent of the time. These were generic platoon-level rehearsals, seldom directly related to the specific mission. The statistics for night operations are worse when they should be better. Only 19 percent of the units rehearsed night operations. At a minimum, platoons must rehearse "Actions on the Objective" and "Movement Techniques." If more time is available, rehearse battle drills and mission-related and military occupational speciality (MOS) specific items.

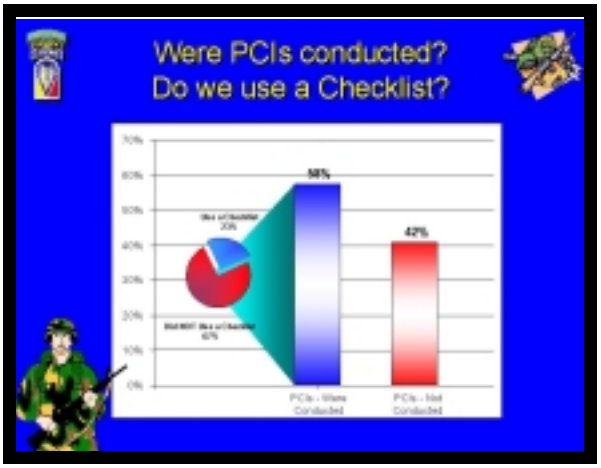
Rehearsals and battle drills represent the glue that binds the operation together and ensures success in battle. Rehearsals ensure that all soldiers know their part in the operation. Ideally, they should understand what their senior leader's mission and intent are in case they have to replace him. Battle drills should be known by every soldier and rapidly executed without applying a deliberate decision-making process. If you have to think about a battle drill in battle, you may die quickly. As the Nike® commercial states, "Just Do It!"

What about pre-combat inspections (PCIs)?

The final step before beginning an operation is the pre-combat check and inspection. An old soldier's refrain is, "That not inspected is often neglected." Many old soldiers got old because they adhered to that dictum. Unfortunately, the older soldiers -- the NCOs -- are not getting that message.

Pre-combat inspections (PCIs) are a hit-or-miss affair. Units conduct PCIs only 58 percent of the time. The revealing statistic is that units use a checklist only 23 percent of the time. Checklists ensure everything is inspected and leaders have not forgotten something critical to the mission. PCIs confirm that soldiers have the essential equipment, food, water, and ammunition to accomplish the mission. Equally important, PCIs ensure that soldiers do not carry unnecessary equipment or sensitive combat intelligence into the battle that could jeopardize the mission

should they become a casualty or captured. Believe it or not, some tactical leaders have stated that they do not need checklists unless they forget something. In combat, those leaders may not get much older. Like "bold aviators" who do not use checklists, they may never become "old soldiers." (See sample of pre-combat inspection checklist on page 4.)



Planning, Rehearsals, and Inspections: Sergeant's Business? You Bet!

There it is! The pre-combat triad of planning, rehearsing, and inspecting is Sergeant's business at the platoon level. As an NCO -- especially a platoon sergeant -- your parallel mission in life is to train your platoon leader for higher command. If you do not offer the platoon leader the benefit of your experience and training, the platoon leader has to learn in a vacuum. In combat, that error will cost lives, perhaps your own.✪

Sample 1 - CHECKLIST FOR COMBAT OPERATIONS

Planning

- ☐ Warning Order #1 - Platoon Leader
- ☐ Warning Order #2 - Platoon Leader
- ☐ Task Org. for OPORD production - PL
- ☐ Terrain Model/Mockup/Diagram 3rd Sqd.
- ☐ OPORD Development
  - ☐ Task Organization 3rd Squad
  - ☐ Para 1. 1st Squad
  - ☐ Para 2. 2nd Squad
  - ☐ Para 3. Platoon Leader
  - ☐ Para 4. Platoon Sergeant
  - ☐ Para 5. Platoon RTO
- ☐ Movement Order - 3rd Squad
- ☐ Annexes - Per B.O.S./Squad
- ☐ Questions & Backbriefs
- ☐ Begin Rehearsals

Rehearsals

- ☐ Movement Techniques
- ☐ Movement Formations
- ☐ React to Contact
- ☐ Break Contact
- ☐ React to Ambush
- ☐ Squad Attack
- ☐ Platoon Attack
- ☐ Enter Building / Clear a Room
- ☐ Mounted Movement
- ☐ Truck Movement
- ☐ Helicopter Movement / AASLT
- ☐ Security Halts
- ☐ Occupy a Patrol Base

☐ Other Rehearsals as Required

Pre-Combat Inspections

- ☐ **Helmet** - Complete and serviceable
- ☐ **LCE/LBV** Complete and serviceable
  - ☐ Canteens serviceable, clean and filled
  - ☐ Ammunition in magazines, 7 mags
  - ☐ Equipment tied down per SOP
- ☐ **Weapon** cleaned and oiled
  - ☐ Zero confirmed
- ☐ **Assault Pack** - mission essential packing
- ☐ **Ruck Sack**
  - ☐ 2 days rations - based on mission requirements
  - ☐ Mission essential equipment on top
  - ☐ Clothing waterproofed
  - ☐ Personal Hygiene equipment
  - ☐ Weapons Cleaning equipment
  - ☐ Cross loaded equipment
  - ☐ Extra Ammunition
  - ☐ 2 quart canteen full and tied down
  - ☐ Equipment on outside tied down
  - ☐ NVDs complete with batteries
  - ☐ Packed per ***Approved*** Packing List
  - ☐ Other Items deemed necessary
- ☐ **Soldier**
  - ☐ Wristwatch alarm turned Off
  - ☐ Loose change put in D-bag
  - ☐ Pen, Pencil, Notebook
  - ☐ Maps and Notebooks sterilized
  - ☐ Camouflage to standard
  - ☐ Question soldiers on Mission / Intent
  - ☐ Question soldiers on Task / Purpose
  - ☐ ID Tags Taped
  - ☐ ID Card serviceable, top right breast pocket
  - ☐ Miles BDA Card in top right breast pocket
  - ☐ Knows Mission, Intent, Task, and Purpose
  - ☐ Knows his task and duties

☐ Jump and Rattle Test - **Noise**

☐ All exposed equipment tied and taped.

Sample 2 - PRE-COMBAT INSPECTION CHECKLIST

GENERAL

- ❑ ID card present and serviceable
- ❑ ID tags present
- ❑ Kevlar serviceable to include foam impact pad, parachutist retention strap and chin strap
- ❑ Camouflage band tied off properly
- ❑ Helmet camouflaged
- ❑ Cat eyes present on camouflage band
- ❑ ICE properly adjusted
- ❑ Does ALICE make excessive noise when soldier moves?
- ❑ All buckles taped down and all metal subdued
- ❑ Seven (7) magazines present and serviceable
- ❑ Lensatic compass present and serviceable
- ❑ Compass set to first azimuth and illumination working
- ❑ MILES head harness tied down
- ❑ MILES torso harness properly secured
- ❑ MILES yellow key tied off
- ❑ MILES transmitter zeroed and secured
- ❑ Does MILES work?
- ❑ Two (2) serviceable pressure dressings
- ❑ Both canteens full
- ❑ Water purification tablets present
- ❑ Canteens tied off by SOP
- ❑ Canteen cup in canteen cover
- ❑ Bayonet clean and sharp
- ❑ Weapon clean and functioning
- ❑ Ammunition stored properly
- ❑ Grenades stored properly on ammo pouches
- ❑ Soldier has proper footgear
- ❑ Soldier TA-50 IAW SOP
- ❑ ALICE pack packed IAW SOP
- ❑ NOD carrying case attached to the ALICE pack
- ❑ Bonds and face camouflaged to standard
- ❑ Camouflage stick available
- ❑ Blank adapter present and serviceable
- ❑ 2 quart canteen full and tied off IAW SOP
- ❑ E-Tool present and tied
- ❑ ALICE pack marked IAW SOP
- ❑ Claymore wire combat rolled
- ❑ Two (2) casualty feeder cards filled out
- ❑ M40 mask and carrier present and serviceable
- ❑ M256 kit on hand and full
- ❑ M258 kit on hand and full
- ❑ MB and M9 paper on hand
- ❑ Knee pads on
- ❑ MOPP suit marked IAW SOP
- ❑ NOD/PAC-4C batteries working and on hand

AIRBORNE OPERATIONS

- ❑ M1950 weapons case properly rigged
- ❑ ALICE pack properly rigged
- ❑ QRS serviceable
- ❑ HPT lowering line properly folded
- ❑ Chute tags filled out and on hand

Sample 2 - PRE-COMBAT INSPECTION CHECKLIST (cont.)

SQUAD LEADER

- ❑ Whistle on hand
- ❑ Map present with acetate and graphics
- ❑ Alcohol/grease pens available
- ❑ Sector sketches on hand
- ❑ Serial number list of all sensitive items in squad
- ❑ PRC-126/127 secured to LCE, battery working and on hand
- ❑ Appropriate frequencies stored in the PRC-126
- ❑ Weapons SL has ammo pouch with tools for hasty repairs
- ❑ All hand-held pyrotechnics needed for the mission properly stored and taped IAW SOP

DEMO TEAM

- ❑ Demo kit cross-loaded so one man is not carrying detorators and explosives
- ❑ Time fuse burned and timed
- ❑ Det cord available

EPW TEAM

- ❑ Prosaic cuffs or zip cuffs on hand
- ❑ EPW processing tags on hand
- ❑ Gags on hand
- ❑ Flashlight taped to M16

AID AND LITTER TEAMS

- ❑ SKEDCO/poleless litter on hand
- ❑ Combat lifesavers bag on hand and full
- ❑ Soldiers know casualty evacuation plan

AUTOMATIC RIFLE

- ❑ Two (2) SAW pouches on LCE
- ❑ One 100 round SAW pouch on hand
- ❑ Scraper tool on hand
- ❑ Extra oil and rags on hand
- ❑ AN/PVS-4 mount mounted and serviceable
- ❑ Proper reticule on AN/PVS-4
- ❑ Six (6) M16A2 magazines

GRENADIER

- ❑ M203 vest worn
- ❑ M203 bore brush on hand
- ❑ Quadrant sight on weapon and serviceable

MACHINE GUNNER

- ❑ AN/PVS-4 mount mounted and serviceable
- ❑ 25 round starter belt on M240
- ❑ M240 range card laminated and on hand
- ❑ Extra oil and rags on hand

ASSISTANT GUNNER

- ❑ Tripod complete and serviceable
- ❑ Spare barrel bag complete with combination wrench, spare barrel, asbestos mitt and cleaning equipment
- ❑ T&E and pintle present and serviceable
- ❑ Two (2) 200 round SAW pouches on LCE

Sample 2 - PRE-COMBAT INSPECTION CHECKLIST (cont.)

ANTI-ARMOR SPECIALIST

- ❑ AN/TAS-5 functioning
- ❑ AN/TAS-5 cleaning equipment/expendables present
- ❑ SU-36 functioning
- ❑ Coolant bottles filled
- ❑ Batteries for AN/TAS-5 fully charged and on hand
- ❑ Dragon range card on hand

RADIO TELEPHONE OPERATOR

- ❑ SOI/ANCD tied off in right cargo pocket
- ❑ Field expedient antenna on hand
- ❑ Miniature OPSKED book on hand
- ❑ Terrain model equipment on hand
- ❑ Poncho on hand for en route map checks
- ❑ Spare battery on hand
- ❑ Writing material on hand for messages

CHAPTER 2

Company Fire Support Planning

by SFC Jeff Mubarak

On 17 July 1972, the North Vietnam Army (NVA) hit the right flank battalion of the 44th Army of the Republic of Vietnam (ARVN) Infantry Regiment at Kontum with an unsupported surprise ground attack at 0900, catching the ARVN with no security elements forward of their defensive positions. The enemy attacked through mechanical ambushes, sustaining heavy casualties, and overran the position. The South Vietnamese suffered more than 700 casualties. The NVA looted the position, then withdrew back into the jungle with their dead and wounded.

That left the ARVN regiment right flank in the air. The deputy U.S. advisor, Lt. Chuck Tallman, convinced the commander to fold back the rightmost company to partially deny that flank. Incredulous at the sight, Tallman watched later that morning as NVA gunners set up 120 mortars and recoilless rifles IN THE OPEN just 1500m to the direct north of FSB November. Tallman grabbed the regimental S-3 and told him he wanted a division time TOT at 1030, using everything within range from a battery of 155s down to 60MM mortars. The hail of HE and WP hit beautifully except that a platoon of 60s got the count down wrong and gave the NVA some warning. Still, that did not save the NVA gunners, who more or less disintegrated under the barrage. Tallman's barrage stripped the NVA of fire support, and the expected attack stalled.

After the loss of the ARVN battalion that morning, Tallman knew that his unit could still face annihilation. He knew that the NVA were still in their attack AA. Tallman had declared a TAC-E earlier and had priority to all air. He got on the radio and asked for an ARCLIGHT divert to bomb along the seam he expected the enemy attack to come through. The Air Force rogered the request: the three-ship B-52 strike would go in a little after 1400. Tallman's Vietnamese were well dug in by now so he "fudged" the danger close to get it where he wanted it. Unseen from the ground, the three B-52s attacked in trail, rending the earth and the NVA indiscriminately. Tallman watched, hanging on to a bunker support to keep from being thrown to the ground by the Air Force earthquake. Miller time![1]

Modern day U.S. Army fire support planners use doctrinal troop-leading procedures (TLPs) to manage time. Units benefit from realistic training exercises at the Combat Training Centers (CTCs). These training centers afford the company fire support teams an opportunity to practice those TLPs in planning, coordinating, and sustaining a defensive fire support plan. Forced to operate under severe time limits, fire support planners often leave important tasks incomplete in the defense. Effective standard operating procedures (SOP) manage time through priorities of work as specified in TLPs. Strict adherence to time management is the key to completing preparations for the defensive battle.

[1]Interview on November 16, 2000, with Mr. Charles Tallman, LTC, US Army Reserve (Ret.), Fort Polk, LA.

Reaction to warning order:

At receipt of the warning order, the company fire support officer (FSO) and fire support non-commissioned officer (FSNCO) begin planning with the company commander. While the company commander integrates fire support with other battlefield operating systems, the FSO actually develops the company fire support plan. That requirement dictates that the FSO and FSNCO begin as soon as the battalion warning order arrives. The FSO cannot wait for the battalion operations order (OPORD) to begin preparing for the defense. To maximize time, the FSO should alert the fire support team (FIST) to the upcoming mission. He should also direct the FSNCO and the forward observers (FOs) to make pre-combat checks and resupply missing items. The FSNCO also develops a hasty fire plan to cover the company's movement into the defensive area of operation. He completes pre-combat checks while the FSO attends the battalion orders conference.

Reaction to the OPORD:

The battalion OPORD describes how the company supports the battalion mission. The battalion fire support products provide company FSOs with fire support guidance, assets available, and their essential fire support tasks (EFSTs). The FSO must confirm that he has all available fire support products from the battalion fire support element (see planning checklist on page 8). Before departing the battalion orders group, the company FSO should grasp the battalion commander's intent, concept of the operation, and fire support guidance. That understanding will allow the FSO to quickly prepare an effective, integrated, and executable fire support plan. Ideally, fire support personnel should understand the mission, intent, and concept of the operation of the higher headquarters two levels up.

Once the OPORD is complete, the company commander and FSO continue planning and develop a tentative timeline for critical fire support tasks. The FSO will submit requests for information and the company mortar section's status to the battalion fire support element (FSE). The FSNCO completes pre-combat checks (PCCs) and the pre-combat inspection (PCI) before the company warning order is issued. The PCI will identify to the FSO the team's capabilities and limitations for the operation.

Issue a warning order:

The FSO must participate in the company warning order. The fire support team (FIST) personnel and the mortar section leader are briefed on the mission, the company sector, and assets available to the company. The FSO should issue the tentative timeline cataloging all tasks to be completed in sequential order.

Make a tentative plan:

The FSO updates the status of the company's mortar section and FIST. To accomplish the mission, the FSO should clearly understand his units' responsibilities and allocations. The company commander must provide clear guidance for fire support in accordance with **FM 7-10, *The Infantry Rifle Company***, and **FM 6-71, *Tactics, Techniques, and Procedures for Fire Support for the Combined Arms Commander***. The FSO merges company and battalion fire support guidance to develop the company EFSTs, the observation plan, and the ammunition management plan or attack guidance matrix (AGM). These three products provide the framework for the fire support plan. The FSO should consider targeting forward, on, and behind the company positions to assist the company in withdrawals and counterattacks if the defensive position is overrun.

The FSO coordinates with the mortar section sergeant and decides on the number and type of ammunition to be fired on planned targets and adjustments. The mortar ammunition on hand and commander's fire support guidance directly influence indirect fire adjustments onto targets, attack criteria, and the AGM. Dismounted enemy, armor versus soft skin vehicles, and the final protective fire should be considered when allocating ammunition.

Early in the planning, the company FSO should coordinate a time to adjust indirect fires with his supported element, adjacent units, and higher headquarters. The FSO finalizes the company's fire support timeline, ensuring it meshes with the battalion timeline and accomplishes all critical tasks.

Timelines:

The following are critical tasks that will always be present in the timeline: company mortar registration, adjustment of indirect fires onto priority targets, fire support rehearsal, FSO's fire support coordination meeting, and the target refinement cutoff time. Ensure the company target refinement cutoff time meets the battalion FSE's target refinement cutoff time. The FSO must conduct a coordination meeting to ensure the fire support plan is integrated and synchronized with the obstacle plan and the company maneuver plan. Once approved by the company commander, the timeline should be disseminated to all subordinate elements and the battalion FSE.

Initiate movement:

The FOs maintain battlefield observation and prepare for the leader's reconnaissance patrol. They do a detailed map study of the platoon and company area of operations. The map recon identifies possible dead space, mounted or dismounted avenues of approach, and other areas of concern. The FO and platoon leader (PL) will confirm the areas of interest identified by the map recon during the reconnaissance patrol. The company FSO should coordinate task organization changes such as combat observation lasing team (COLT) operating in the company sector or FOs being detached to other companies. The FSO should request a meteorological (MET) message and update it every two to four hours for the company mortars.

Conduct reconnaissance:

The FSO accompanies the company commander and the PLs on the leader's recon patrol. If possible, the FOs should accompany the PLs. Whenever possible, parallel planning should be the norm at all levels, to include platoon. During the leader's reconnaissance patrol, the FSO and FOs should identify the observer positions, refine the planned target locations to within 10 meters using a plugger, and verify the task and purpose of each target.

Observation and target triggers:

Instructions to the FOs should include all pertinent information available, focused on the observer's assigned EFSTs. The FSO should integrate the maneuver observers into his company's observation plan. This multiplies eyes on the battlefield and assists in employing fire support. Trained FOs should be positioned on brigade- or battalion-directed obstacles. Once they understand their assigned task, communications net, the company scheme of maneuver, and the assets available, release the observers to establish observation posts (OPs) and develop triggers.

The FOs should identify the trigger for each target in accordance with the method described in **FM 6-30, *Tactics, Techniques, and Procedures for Observed Fire***, Chapter 5, Section IV. During defensive operations, a trigger is normally a spot on the ground. This particular section of the manual offers a simple sequence for moving target engagement and trigger point development. The formula for determining a trigger point is: transmission time plus time of flight multiplied by the expected speed of the target in meters per second. That equals the distance from the intercept point or planned target location. Triggers should be developed for both mounted and dismounted targets.

Observation techniques:

One observation method is to position the observer forward of friendly troops to trigger the target as the enemy passes the observer's location. Another method is to use forward maneuver units or their listening post/observation post (LP/OP) to observe and trigger targets. The observer must mark the trigger for day and night operations. Infrared chemlights are a good marking tool for night operations. Engineer tape nailed to the observer's side of a tree works well for daylight missions.

The leader's recon should identify mortar section firing positions based on mission, enemy, terrain, troops, and time (METT-T). Using the"1/3-2/3 rule," the mortars are positioned to fire 1/3 of their planning range behind the company and 2/3 forward. This technique allows the mortar section to cover a company's withdrawal to alternate or supplementary positions without displacing the mortars (see Figure 1).

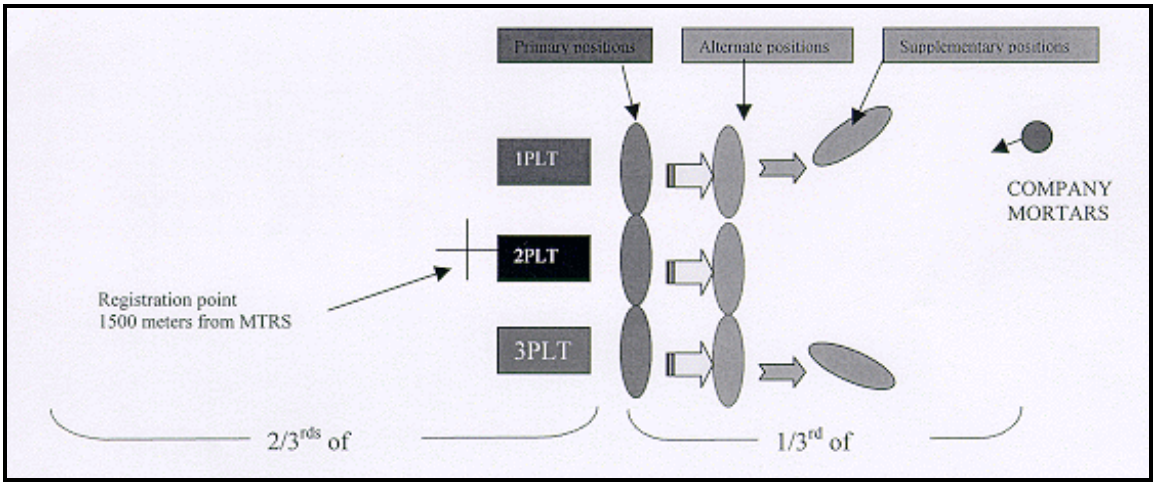


Figure 1

Complete the plan:

Once the leader's recon is complete, the FSO should have a clear understanding of the company defensive position. As the company occupies its position, the battalion FSE should have all friendly element locations, especially FOs. The battalion FSE must know the company observation plan, including all FOs and maneuver observers employed by the company. Even though most maneuver elements are not trained FOs, they can trigger targets if they understand the task, purpose, method, and effects desired for the target they are observing. If the company defensive sector is forward in the main battle area, a Q36 sensor zone can cover the company mortar position to avoid friendly counter battery fires from engaging the mortars in the heat of the battle.

Update the MET data and register:

The mortar section should receive meteorological (MET) messages every two to four hours. This information must be entered into the mortar ballistic computer (MBC). When time and ammo are short, it may not be possible to register and adjust company mortars on priority targets. If registration is not possible, MET messages will increase mortar accuracy. If ammo and time are available, register! Company mortars should be registered a minimum of 1500 meters from the mortar positions. The registration point should be centered forward of the company sector. The registration point serves for targets 800 meters over or short, and 400 mils left or right. Any target outside of the valid registration area requires an additional registration point along with adjustments in ammunition requests, mortars tasks, and timelines (see Figure 2).

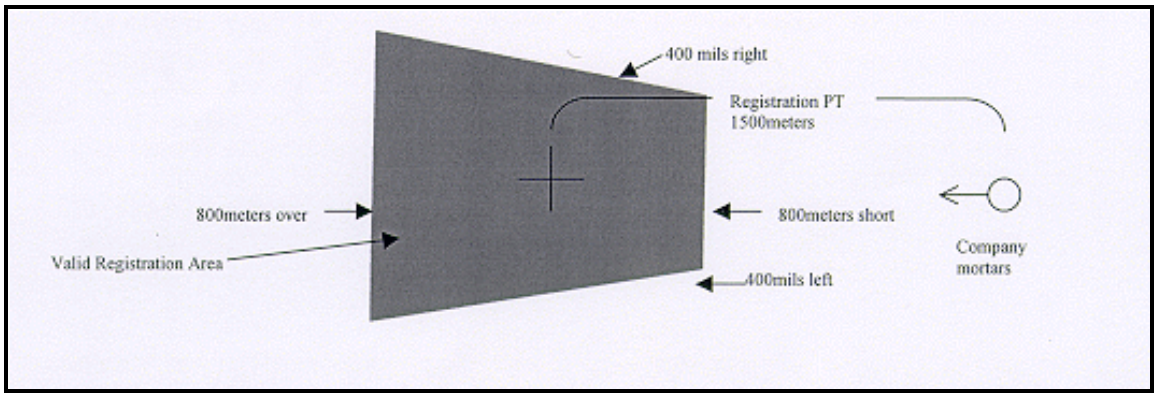


Figure 2

Communication (Commo) checks:

Once observers are in place, the entire fire support network should check communications. Those checks include the FSO, FOs, company mortar sections, the battalion mortar platoon, the battalion FSE, and the artillery fire direction center (FDC). The FIST should maintain communications with these agencies in the event the battalion headquarters sustains casualties and is unable control the battle. The FSO/FSNCO should complete the fire support plan, target list worksheet (TLWS), and the fire support execution matrix (FSEM). They should brief the fire support plan to the company commander prior to the company OPORD.

Issue the OPORD:

The FSO will distribute fire support documents to the PLs and brief the fire support portion of the company OPORD. The FSO/FSNCO should brief the task, purpose, method, and effects desired for every target. Brief the observation plan, how it will affect the company, who is the primary observer and alternate observer, and what event will trigger each target. Explain how request for indirect fires will be cleared within the company and across the battalion. The FO is responsible for briefing the squad leaders on the fire support plan. If an FO is positioned forward early, the FSNCO should brief the squad leaders of the platoon.

Disseminate and EXPLAIN the plan:

The FSEM is the best tool to pass information to platoon level. **FM 6-20-20,** ***Tactics, Techniques and Procedures for Fire Support Battalion Task Force,*** December 27, 1991, explains in detail what should be contained in the company FSEM. The FSO explains attack guidance, engagement criteria, and high-payoff target lists. This step informs the company's key leaders what type of target should be attacked, when to attack the target, and how to engage the target. The FSEM pinpoints the event that will shift priority of fire to the company or the handover line. **FM 101-5-1,** ***Operational Terms and Graphics,*** describes handover line as a control feature, preferably following easily identifiable terrain features, where responsibility for conduct of combat operations is passed from one force to another.

The FSEM shows the scheme of fires, assigned essential fire support tasks (EFSTs), the target list worksheet, and actions to be taken upon loss of all senior fire support personnel (FSO/FSNCO/FOs). It should have frequencies and call signs for all assets in support of the battalion. This includes Air Force, Navy, and Army aviation fire support assets so the company can continue to employ fire support weapon systems if the fire support personnel become casualties. The FSO should explain the list of fire support coordination measures and how they affect the company. The FSO briefs when enemy fire support is expected to be within range of the company positions and their capabilities. If adverse weather is expected, he should provide the effects of weather on fires.

Supervise:

The FSO and FSNCO supervise all fire support preparations in the company sector, including adjustment of indirect assets. All adjustments should be completed during daylight hours to achieve the accuracy demanded by close proximity of friendly troops. To minimize endangerment of friendly troops, construction of survivability positions should begin as early as possible. A minimum of 18 inches of overhead cover is required to provide protection from 81mm mortar munitions.[2] Adjustment of fires can be scheduled on the timeline after the positions are complete. Combined with ready survivability positions, the unit can use delay fuzes to decrease friendly unit exposure to fragmentation during danger close adjustments. The technique of waiting until the unit has semi-completed positions allows the maneuver element time to continue working on preparation for the defense outside of the effects pattern of the indirect fires. They can maintain security in the company area from their fighting positions.

Rehearse:

Upon target adjustment completion, the FSO should conduct a rehearsal involving, at a minimum, the entire FIST and the company mortars. If possible, company key leaders should participate. The rehearsal should highlight every trigger event for each target in a sequential manner. Vehicles should be used to rehearse mounted targets. The FSO should walk fires during planned displacements from the primary defensive positions to the alternate or supplementary defensive positions. The mortar sections should lay on each target as discussed in the rehearsal. The FSO uses the battalion mortar net, while the FSNCO monitors and controls observers on the company mortar net. The FSO/FSNCO should continuously refine and update the plan until the next mission is received. They should pass those updates to both higher and lower echelons. If required, the FIST should consolidate and reorganize as the main battle passes by the company.

[2]**FM 5-103,** ***Survivability,*** provides dimensions for thickness of overhead cover when building survivability positions.

Summary:

Modern day fire supporters must use troop-leading procedures if they hope to complete all defensive preparations in a timely manner. Priorities of work, combined with troop-leading procedures, not only organizes but meshes maneuver and fire support BOS. History has proven that forces in defensive operations must develop effective, integrated, executable fire support plans in time-constrained environments. This article and the checklist on the next page may be helpful in the development of SOP preparation of a company defense.✪

COMPANY FS PLANNING CHECKLIST FOR DEFENSIVE OPERATIONS

TLP **COMPANY FIST ACTIONS**

After Warning Order
- __Begin planning early
- __FSNCO begins PCC/PCI and re-supply
- __Inform the FIST and mortar section of new mission
- __Develop hasty fire plan for movement to company defensive AO

1. Receive the Mission
   - __Update friendly and enemy situations
   - __Determine assets available, allocations, and FSCMs
   - __Obtain battalion TGT list worksheet (TLWS), FSEM, and attack guidance matrix
   - __Understand the battalion TF FS plan and how it affects your company
   - __Identify specified and implied FS tasks for your company
   - __Brief CDR on above
   - __Receive the CDR's restated mission
   - __Receive CDR's guidance for fire support
   - __FSO identifies all tasks to be completed and develops priorities of work (POWs) in preparation for the defense
   - __Report FIST and mortar status to battalion FSE
   - __Request mortar ammunition
   - __Begin making tentative plan with CO CDR
   - __Submit requests for information to battalion FSE
   - __Pre-combat checks/inspection completed

2. Issue Warning Order
   - __Receive briefing on the company mission and area of operation
   - __Issue warning order to FIST and mortar section leader on fire support specific issues
   - __Issue tentative company fire support timeline to include POWs (include all critical tasks)

3. Make a Tentative Plan
   - __Attach operations and obstacle overlays to map
   - __FSO, FSNCO, FOs and mortars involved in planning process
   - __List specified and implied tasks that must be accomplished by fires
   - __FSO develops company EFSTs
   - __Plot all battalion targets to achieve CDR's guidance (do not violate allocations without HHQ permission)
   - __Determine if battalion targets account for any of CDR's guidance
   - __Plot targets on overlay to account for remaining CDR's guidance
   - __FSO/FSNCO plan fire on company positions and behind company positions
   - __Advise CDR if tasks can or cannot be accomplished with available assets and allocations
   - __Determine task, purpose, specific method, and effects desired for each target
   - __Develop TLWS and FSEM
   - __FSO coordinates times for registration and adjustment of indirect fires in support of company mission
   - __FSO coordinates with adjacent units and supported unit, refines and finalizes a backwards timeline tailored to company and battalion timelines.
   - __FSO disseminates timeline to subordinate units and higher headquarters
   - __FSO develops the observation plan and ammunition management plan (ATGM) with the mortar section leader
   - __FSO develops a scheme of fires for the company

4. Initiate Movement
   - __Maintain battlefield observation
   - __Coordinate gain/loss of FO due to task org
   - __FOs conduct map terrain analysis in preparation for leader's recon
   - __FSO/ FSNCO request MET message for mortar section every 2-4 hours

5. Conduct Recon
   - __FSO always accompany maneuver leaders on recon
   - __Ensure FOs accompany PLs on recon
   - __Verify TGT locations, trigger points, and observation plan
   - __FSO and FOs refine targets to within 10 meters
   - __FSO and FOs identify observer positions (primary and alternate)
   - __FOs identify determine triggers for targets in their area of observation
   - __FSO provides instructions to FOs
   - __Identify mortar firing positions (primary and alternate)
   - __Mark trigger points for ease of identification

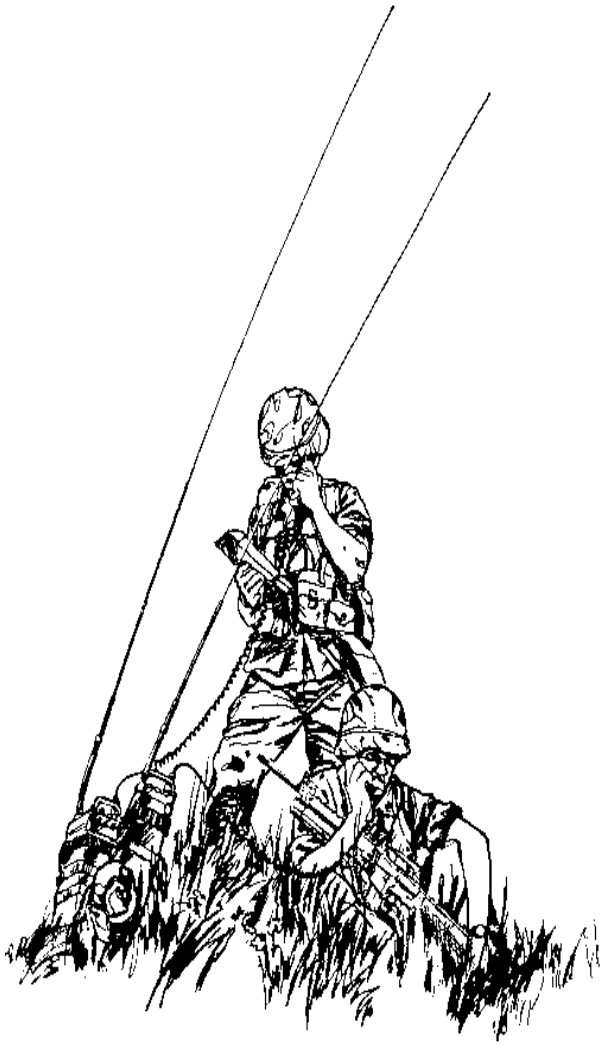
6. Complete Plan
   - __Modify plan if needed
   - __Emphasize observer movement, security, and OP requirements
   - __Observers establish triggers for day and night operations
   - __Transmit location of friendly positions and TLWS to battalion FSE
   - __Complete ammunition management plan for company mortars (attack criteria, ATGM, number of rounds for adjustments, number of rounds for FPF)
   - __Receive approval for scheme of fires
   - __Brief FIST on scheme of fires
   - __Rehearse FS briefing
   - __Brief CDR on FS plan
   - __Request a censor zone over company mortars if the company is the forward element in the battalion
   - __Receive MET message and/or update every 2-4 hours
   - __Complete the TLWS, FSEM and fires portion of the company OPORD

7. Issue OPORD
   - __FSO/FSNCO brief fires paragraph
   - __Ensure mortar section and leader FOs attend the company order (if possible)
   - __Disseminate all fire support products to PLT leaders (FSCM, TLWS, ATGM)
   - __Have FOs backbrief fires when PLs backbrief CDR
   - __Ensure platoon FO s brief the fires paragraph to platoon's key leaders; if the FO is positioned forward, then the FSO or FSNCO should brief the platoon key leaders on the fire portion of the company OPORD

8. Supervise
   - __Register company mortars and any other assets necessary
   - __Adjust indirect fire assets onto priority targets
   - __Ensure concurrent MET messages are received by or delivered to the mortar section every 2-4 hours
   - __Conduct rehearsals; include FOs, FIST HQ personnel and mortars (if possible include key leaders from the maneuver element)
   - __Employ vehicle to rehearse mount target triggers
   - __Lay mortars onto targets as they are addressed during the rehearsal
   - __Continue to refine targets and triggers for actual obstacle emplacement, defense of TAA, etc.
   - __Continuously update and coordinate plan as necessary
   - __Complete construction of survivability/fighting positions

References:

FM 5-103, ***Survivability***
FM 6-20-10, ***Tactics, Techniques, and Procedures for the Targeting Process***
FM 6-20-20, ***Tactics, Techniques, and Procedures for Fire Support Battalion Task Force***
FM 6-30, ***Tactics, Techniques, and Procedures for Observed Fire***
FM 7-10, ***The Infantry Rifle Company***
FM 7-90, ***Tactical Employment of Mortars***
FM 101-5, ***Staff Organization and Operation***



CHAPTER 3

Field Artillery Logistics Synchronization: The Next Step

by SFC Gabriel Espinosa

The light cannon battalion had been firing all morning, supporting the brigade as it moved against light to medium resistance. Rounds were going down range and the enemy was getting hit, HARD! To keep pace with the brigade and keep up the fires, the battalion was displacing and firing by batteries. The goal was to keep two batteries in action while the third displaced. So far it had worked well. The displacing battery had resupplied before leapfrogging forward. It would be ready to fire when it reached its new position. Yet trouble was on the way prompted by the success of the brigade. The commander had anticipated that he might need to break into the pursuit mode to destroy the enemy. He had that option in his rucksack, wargamed at the brigade tactical operations center (TOC). He planned an end-around sweep with one battalion to plug the enemy's main escape route. To offer that battalion the greatest possible combat power, he planned to attach a direct support (DS) cannon battery and a tank company to the battalion. The order to execute the on order mission went out just as the cannon battalion air assaulted a battery forward.

The remainder of the battalion continued firing, but the S4 knew he had a problem. The latest logistics meeting had not considered the problems associated with the end-around option. One battery would expend its ordnance just about the time the air assault battery was ready to fire. The call to attach a DS battery to the commander's deep attack maneuver meant that that unit would need a triple ammo load. He had been juggling fuel already to support the leapfrog displacements. No provision had been made for the slings for the air assault. More importantly, the need for helicopter blade time to move the battery had not been pursued. The S4 had brushed over that requirement during the wargame of the brigade maneuver plan. Now he had to call logistics 911 before it was too late. The S4 was firmly in the reactive mode and it only stood to get worse. He needed to get out ahead of the ball game, so he called for an immediate logistics synchronization meeting.

The light cannon battalion must ensure that its logistics plan is synchronized with the brigade maneuver plan. In the above scenario, the staff and especially the S4 had "pencil whipped" a tactical option integral to the brigade maneuver plan. The brigade was now going to execute that option and the artillery battalion was not prepared for the commander's "audible." They could have avoided this pitfall through effective logistics synchronization. Logistics planning should project the firing batteries' needs for the next 72 hours so that the supply sections can meet those demands. The tool to ensure this is a logistics synchronization matrix to match the logistics support to the expected battle rhythm. Communications is the key.

Simple information management is the foundation for logistics synchronization for the direct support field artillery battalion. The accuracy of the information available to the staff begins with the radio telephone operator (RTO). The RTO takes the messages from the firing batteries. He must then make sure that the information gets to

the battle captain. The battle captain then passes the message to the appropriate staff section and that is where the planning process begins. The support platoon leader should canvas the staff so that when he walks into the synchronization meeting he has a 90 percent accurate projection of what will be needed from his support platoon. He then has the information needed to allocate vehicles and cargo space.

A technique to improve this process of collecting and collating is to consolidate unit supply clerks in the administrative/logistics operations center (ALOC). There they serve as battery points of contact (POCs). They can track battery requests to make sure they are answered and also provide feedback to the battery if a request runs into problems. Moreover, they can ensure that their unit's supplies go forward as part of any resupply mission. A further step that can be taken to measure the unit's battle rhythm is to attach a mechanic to each firing battery. The mechanic reinforces standard preventative maintenance procedures within the battery. He can fix many mechanical problems as they arise. If that is not possible, the mechanic can call for additional support. He will know exactly where the battery is as far as status of vehicles, parts orders, and repairs. Applying the rule that "Knowing is Better Than Not Knowing" establishes the proper mental framework necessary to manage the information that drives the unit's operations.

Once that information is gathered, the issue becomes making use of it. If "Knowing is Better Than Not Knowing" is the base plate for gathering information, then "Unshared Information Is Useless" should guide the management of the data collected. The best forum to quickly share such information is a logistics synchronization meeting. The following suggests the areas that should be covered at a logistics synchronization meeting for a single phase of an operation or a time period.

Class I: The dining facility (DFAC) NCOIC briefs the amount of water on hand including what is on hand at the firing batteries. He should know how many MREs and rations are on hand, what the firing batteries have at present, and what he projects for resupply.

Class III: The S-4 NCOIC briefs the amount of fuel on hand, status, and projected resupply. His projection should be based on having all fuel cans empty.

Class IV: The S-4 NCOIC briefs the status of concertina wire, tangle-foot, pickets, plywood, and sandbags. He should know what is on hand and whether the batteries will require more of these items. If a move is expected, he must know what the battery can carry and what will be needed to carry the excess.

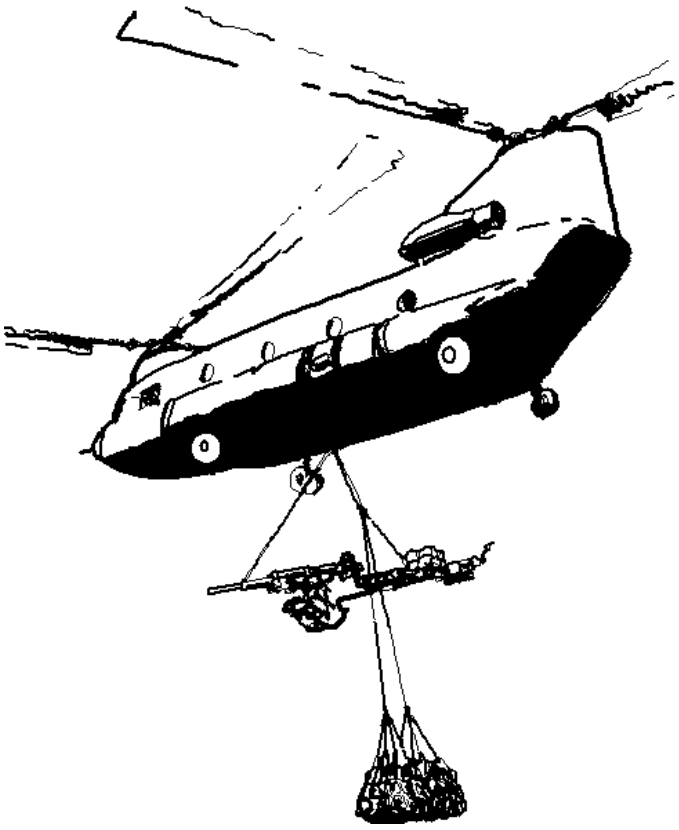
Class V: The ammo platoon sergeant briefs what is on hand, what is at the ATP, and what he expects for resupply. For critical ammunition types, he should know the status of every round. The ammo platoon sergeant should know what ammo each battery has at present and where that ammo is located (on the gun-line or in the ammo carrier). Most importantly, he should be able to forecast what the batteries will need.

Class VII: The S-4 briefs what major end items are on order, who needs them, and when they are expected to arrive.

Class VIII: The battalion aid station (BAS) NCOIC briefs the number of combat lifesavers, the amount of combat lifesaver (CLS) bags in each battery, and the amount of Class VIII he has on hand. He should know how he will resupply the batteries and when he will be resupplied by C-Med.

Class IX: The battalion motor officer (BMO) or maintenance NCOIC briefs the status of parts on order, deadlined vehicles by bumper numbers, howitzers by bumper numbers, and any services due. He should also address what parts are being sent forward to the batteries for installation.

The objective in such a detailed logistics brief is to coordinate all classes of supply to maximize the utility of a single resupply based on unit battle rhythm. The desired end state is a common understanding between the planners and the executors. That means that others may need to participate in these sessions. For instance, in the above briefing, the S-1 or the personnel (PS) NCO might brief the personnel status for each battery, the numbers of killed in action (KIA) and wounded in action (WIA), and expected replacements for them. The briefing also offers a forum to the S1 to address casualty letters, awards, ratings, or other administrative matters that affect the unit's performance. In a similar vein, the Chaplain can discuss what issues concern him at the moment and where he will be located for the next phase of the operation. Effective logistics synchronization establishes effective logistics battle rhythm. The result is a proactive logistics program versus a reactive scramble. As postulated in the introductory vignette, a proactive logistics program anticipates the tactical options established in the brigade maneuver plan.✪



LOGISTICS SYNCHRONIZATION WORKSHEET

24 Hours	A Battery	B Battery	C Battery	Radar	TOC
Class I					
Class II					
Class III					
Class IV					
Class V					
Class VII					
Class VIII					
Class IX					
Personnel					
Mail					

CHAPTER 4

The Military Police (MP) Platoon Command Post (CP): The Platoon Sergeant's Role

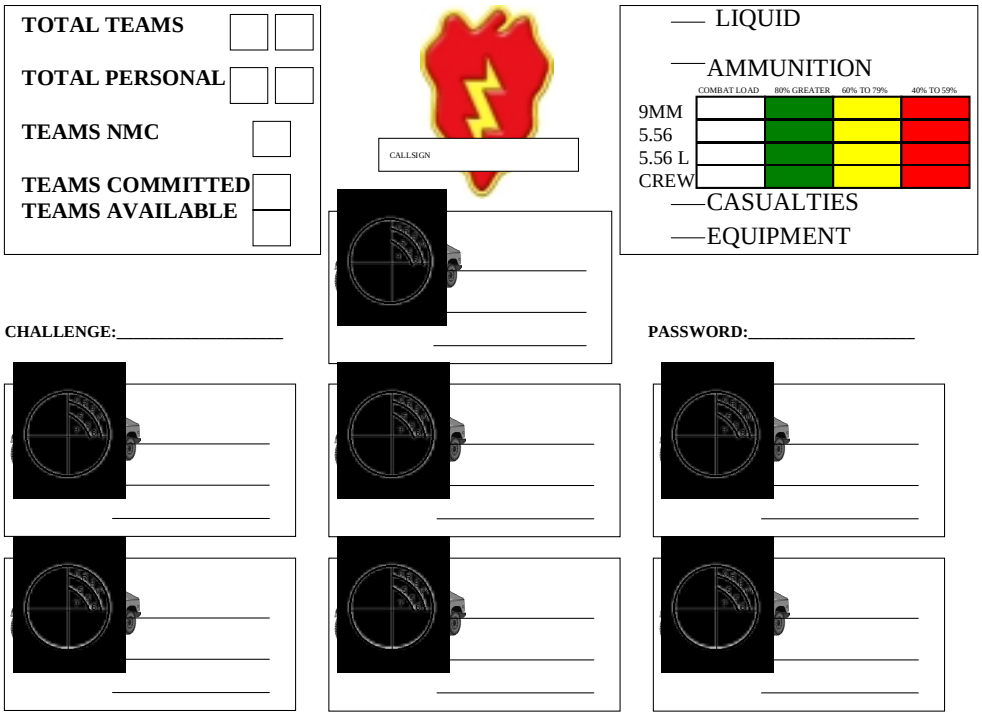
by SFC Allen G. Blanchette

An effective military police (MP) platoon command post (CP) demands special tactics, techniques and procedures (TTP) to function effectively in the field. The platoon sergeant must be a master of these, especially in combat. The CP has two primary functions: to track soldiers and equipment during the battle to assist the platoon leader in the command and control of the unit, and to serve as a data center that processes enemy and friendly information. There are three basic building blocks for any CP: an internal work area, a physical setup, and the personnel that make the CP function. Assembling these building blocks and making them operate as one is part and parcel of the platoon sergeant's art.

The success of a CP depends on its ability to battle track information in any situation, ranging from combat to peacekeeping. Battle tracking is not an easy task. A platoon sergeant brings experience into the equation. The daily information flow if not carefully managed can rapidly overload a platoon headquarters. Knowing what is important, displaying that data, and analyzing the information are equally crucial tasks. Simple tracking tools can be used to get those jobs done if they are guided by experience. The CP must have a system in place to record and display basic message traffic regardless of its physical size. An effective CP provides vital battle tracking information using a centralized heads-up display (HUD).

The concept of a platoon HUD is simple: provide a situational update at a glance. Anyone should be able to look at the HUD and understand what the platoon is doing or what it plans to do without asking a lot of questions. More is not necessarily better for a HUD. The charts should not be so busy that they are not functional. Too much information may confuse the viewer. The art is to determine what information is required regularly to determine how data from various sources can be combined effectively into one chart. Again, by lending the factor of experience, a platoon sergeant can help refine requirements and the physical layout of the HUD.

The following HUDs are *examples*. These are suggestions, but many other possibilities exist depending on a platoon's mission. A division MP platoon battle tracks issues that a corps MP platoon would not consider. A platoon HUD should be tailored to that platoon's mission with an eye to clarity and content.



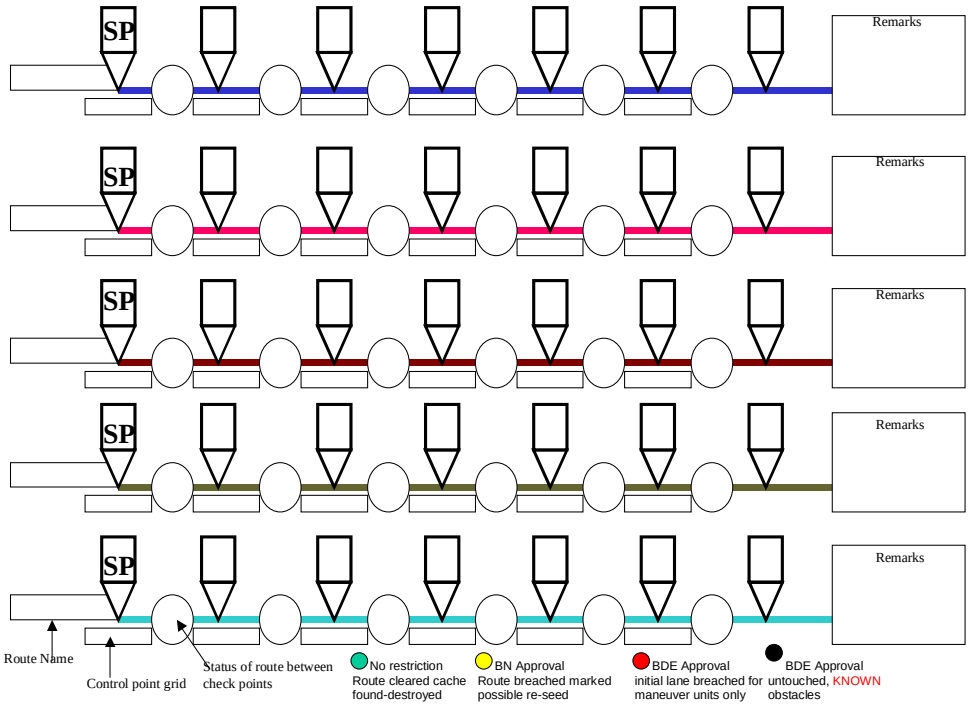
COMBAT POWER CHART: This chart combines weapons platforms, personnel, and equipment, in essence the MP team -- our basic building block. Anyone who views this chart should be able to determine:

- ! Derive total teams
- ! Total personnel
- ! Teams non-mission capable
- ! Teams committed or task organized to separate commands for specific purposes
- ! Total teams available
- ! Status of:
  - # Liquid (water-fuel)
  - # Ammunition by type
  - # Casualties
  - # Equipment

ITEM	HQ Status	HQ Remarks	1st Squad Status	1st Squad Remarks	2nd Squad Status	2nd Squad Remarks	3rd Squad Status	3rd Squad Remarks	remarks
WATER									
CLASS 1 FOOD									
CLASS II Indiv Equip									
CLASS III POL									
CLASS IV Barrier mat									
CLASS V Ammo									
CLASS VIII Medical supplies									
CLASS IV Repair parts									

CLASS OF SUPPLY STATUS: This chart breaks down the status of all nine classes of supplies, including combat load and sustainment load. A combat load is the amount of a particular class of supply needed to complete missions between 24 and 72 hours in duration. A sustainment load is the amount of a particular class of supply needed to complete missions 72 hours or more in duration. This chart should be updated every 12 to 24 hours depending upon the operational tempo (OPTEMPO).

ROUTE CONDITIONS



ROUTE STATUS BOARD: This chart identifies the route name, its classifications, obstacles, lane width, date last traveled, and the surface materials (PV - paved, GV - gravel, SL - single lane, DL - dual lane, DT - dirt trail, FD - ford site, and BR - bridge). As an example, the colors of RED-AMBER-GREEN-BLACK could be defined as:

GREEN = NO RESTRICTION. Route is cleared, cache found and destroyed.

AMBER = Battalion approval is required for travel. Route is cleared, obstacles breached, and cleared lanes marked. Cache has not been found, re-seed is possible. Enemy activity noted within the last 48 hours.

RED = Brigade approval is required for travel. Initial lane breached for maneuver unit travel only. Enemy activity noted within the last 24 hours.

BLACK = Brigade approval is required for travel. Untouched known obstacles.

SIGACT

#	DTG	LOCATION	SUMMARY OF INCIDENT	RECIEVED FROM	REMARKS

SIGNIFICANT ACTIVITIES (SIG-ACTS) BOARD: This chart chronologically displays enemy and friendly activities that impact on the mission. They reflect the Commander's Critical Information Requirements (CCIR) and improve situational awareness for the platoon. The CCIR has three building blocks: the Priority Intelligence Requirements (PIR), the Friendly Forces Intelligence Requirements (FFIR), and the Essential Elements of Friendly Information (EEFI).

It should include activities within the platoon's area of operation and the surrounding areas. Keeping this chart up to date ensures interaction between the S2 and S3 sections of the higher command and the MP platoon as a whole. One technique is to post a tracking number for each incident on the map to show trends and possibly predict enemy or civilian activity.

MISSION

FRAGO	ELEMENT	LOCATION	SUMMARY OF MISSION	SP	RP	REMARKS

MATRIX OR MISSION BOARD: Who gets what mission and when they rest.

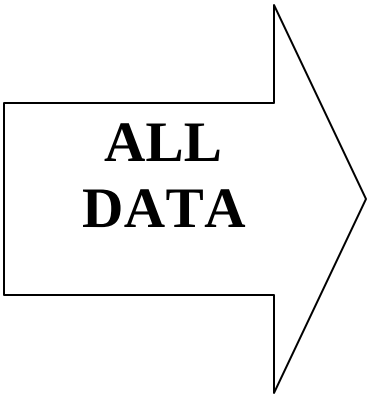
DIVISION FORWARD COLLECTION POINT
INTERNMENT RESETTLEMENT OPERATIONS

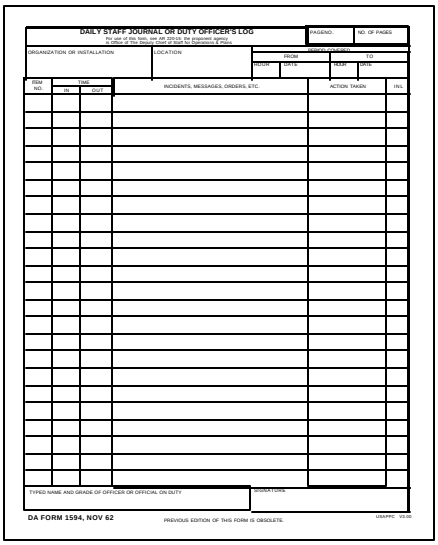
	EPW				CIVILIAN		
	Male		Female		Male	Female	Child
	enlisted	officer	enlisted	officer			
SHIPPED TO DIV CENTRAL COLLECTION POINT →							
PROCESSED AWAITING TRANSPORT →							
total							

TRANSPORTATION ASSIGNED BY DIVISION

	AIR	*RAIL*	*SHIP*	*GROUND*
DESCRIPTION OF TRANSPORT				
QUANTITY OF TRANSPORT				
UNIT PROVIDING TRANSPORT POC				

ENEMY PRISONER OF WAR (EPW) TRACKING CHART: Who is in your EPW cage, where and when they were captured. Who has departed for the rear to be interned, when and how were they transported.





DAILY STAFF JOURNAL OR DUTY OFFICER'S LOG

For use of this form, see AR 220-45; the proponent agency is Office of the Deputy Chief of Staff for Operations & Plans.

PAGE NO. | NO. OF PAGES

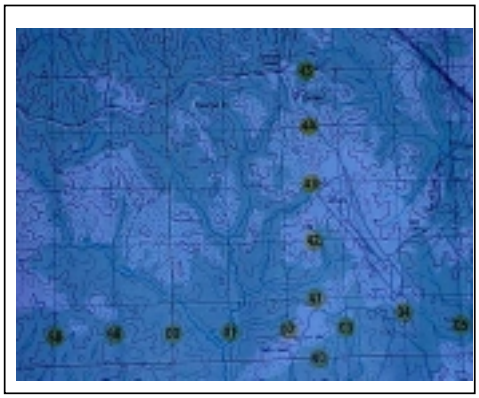
ORGANIZATION OR INSTALLATION | LOCATION | DATE ENTRIES MADE: FROM (MONTH, DAY, YEAR) TO (MONTH, DAY, YEAR)

ITEM NO.	TIME IN	TIME OUT	INCIDENTS, MESSAGES, ORDERS, ETC.	ACTION TAKEN	INIT.

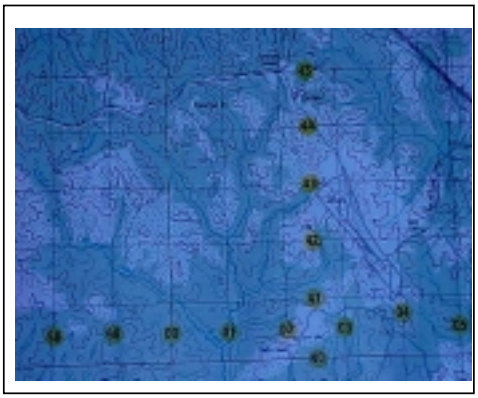
TYPED NAME AND GRADE OF OFFICER OR OFFICIAL ON DUTY | SIGNATURE

DA FORM 1594, NOV 62 | PREVIOUS EDITION OF THIS FORM IS OBSOLETE. | USAPPC V3.00

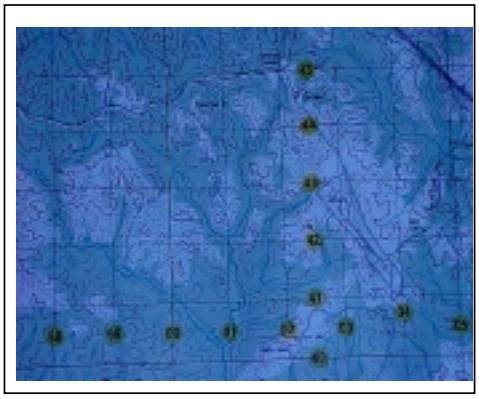
STAFF DUTY JOURNAL: All message traffic coming in to TOC is logged in. The operative word is ALL. The staff duty journal is the platoon's master archive. It is used to update, confirm, or deny information. If it is not on the journal, it did not happen.



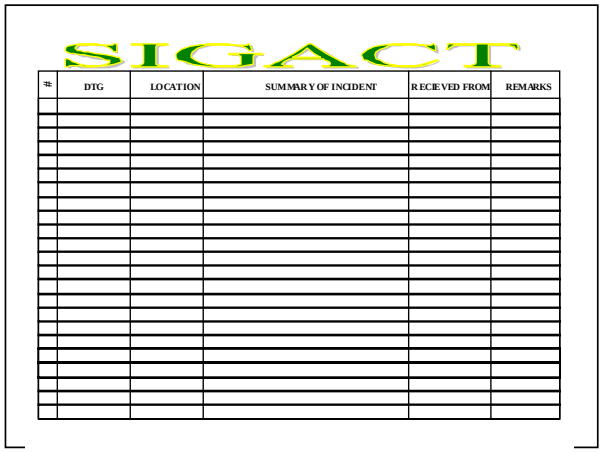
MANEUVER GRAPHICS OVERLAY



CSS GRAPHICS OVERLAY



SIG-ACTs OVERLAY



SITUATION/MAP BOARD: This is the most important HUD, the nucleus of the TOC. It should contain at a minimum:

Maneuver Graphics OVERLAY - Boundaries and unit locations (include host nation police, fire, and hospitals).

CSS Graphics OVERLAY - Internal checkpoints, route names, classifications, obstacles, special circulation control measures, route signs, and locations for all classes of supply and services within area of operations.

SIG-ACTs OVERLAY - Recent activities that affect the mission, such as enemy contact, civilian black marketing, or others. The number placed on the location matches the number on the significant activities board.

It should be apparent that in order to have a CP, the platoon must establish one, that is, the physical setup of the facility. At the JRTC, light MP platoons are often slow in setting up their CPs. It is usually a question of time and space. Even the standard GP small is often too bulky to be useful to a division MP platoon. While commercial tents and shelters are available, they are not made for hard military use. The trick is to balance size and ease of use. Remember that desire does not equate to need. Platoon sergeants should be the institutional memory for what the platoon *NEEDS*. A platoon needs the space to establish its HUD as a baseline operational requirement. Anything beyond that is a luxury determined by desire. Light MP platoons cannot afford luxuries.

Here is a possible answer to the need for an MP platoon CP: convert the M101A2 ¾-ton trailer. The trailer is six feet high and waterproof, providing space for radios, a small work area, and a HUD for the platoon. Space is limited, however. That can be improved by building an "apron," which when positioned properly over the exterior of the trailer, will double working space. It can be disassembled for storage.

The technique is simple. Lightweight screening system (LSS) poles can be used to support the four corners of the apron. Dig a two-foot trench four feet around the trailer base. Use the dirt from the two-foot trench to build a small berm surrounding the CP. This will enhance survivability without limiting the ability to depart quickly. The apron walls are then anchored in the berm to allow rain to run off. With the trailer walls actually acting as the primary means of supporting the CP, the setup is very stable, even in high winds. This exterior area allows storage for equipment previously inside the trailer.

With the interior work area ready and the trailer ready, personnel are the last element needed to pull it all together as a functional CP. Unfortunately by MTOE, MP platoons do not have soldiers who can be dedicated to this mission. The platoon sergeant is the best one to manage personnel to keep the CP manned. Options are to have the mechanic or driver serve as a radio telephone operator (RTO). A division MP company is authorized medics or communication specialists, but not enough to assign one for each platoon. Another option may be to incorporate members of the squad co-located at the CP during their rest plan.

Once the CP is up and running, the platoon sergeant is its overseer, supervising the flow of information in and out. Working closely with the platoon leader, he monitors the incoming information, processes it, and decides what to do with it. That demands a quick and thorough analysis of the information before passing it further. The platoon sergeant may have to question the source of information to obtain factual data. Reports must be accurate. That means that they are based on facts, not assumptions or guesses. An effective platoon sergeant will make sure his CP

gets the facts. The platoon sergeant also ensures squads execute missions in accordance with the operations order. This means setting the tone everyday in sensitive item reports or gleaning information from SITREPs as early as possible. For example, a late, incomplete, or inaccurate route reconnaissance overlay may mean the difference between success or failure at the brigade level.

In summary, it is true that platoon sergeants are responsible for the beans and the bullets in combat operations. It is equally true that a platoon sergeant's responsibility also covers the platoon's command post. Getting the CP "right" should call on the platoon sergeant's experience and his grasp of the TTPs involved. Each individual platoon sergeant sets the standards for the platoon. Command post operations are just another facet of the job.✪

CHAPTER 5

SINCGARS RETRANS Mission Planning in Combat Operations

by MSG Robert Lipman, MAJ Trip Higgins, and CPT Kris Ellis *

The commander had actually finished the war gaming and was on the verge of selecting a course of action. The key staff officers -- the S2, S3, and the fire support officer (FSO) -- had waded in throughout the Military Decision-Making Process (MDMP). Even the "duck hunter" had offered his ideas, seconded by the air liaison officer. The S6 looked like he was there, but he wasn't. He was daydreaming when the old man said, "Yeah, we'll go with course of action (COA)2. SIGO (signal officer) make sure that retransmission (RETRANS) is in place to support the attack." In his mind the S6 was thinking, "In place? Attack?" as he automatically responded, "Yes, Sir!" As the planning group broke up, he scuttled over to the map to confirm his worst fears. "Yep," he thought, "COA 2 is the one I didn't want picked - -now I am stuck with it!" That was true to a degree. The S6 did have to lash something together. And he had to do it quickly. The next day, a RETRANS team deployed to an ill-conceived site was overrun and killed. They were the REAL "stuckees."

OVERVIEW

Planning SINCGARS RETRANS team operations is tough. During the first Joint Readiness Training Center (JRTC) rotation at Fort Polk in 1992, RETRANS team operations were listed as a "Needs Improvement" by the rotational unit. Every brigade combat team (BCT) training at the JRTC in 1998 and 1999 also listed RETRANS team operations as a "Needs Improvement." It is definitely a trend that needs addressing.

Here is the bottom line for deployment of a RETRANS team: If the S6 is the only member of the battle staff planning and coordinating the team's employment, request replacement personnel and equipment prior to releasing the team, and then implement the contingency communications plan. Tell the chaplain he is needed. Why, you ask? ***BECAUSE YOU ARE GOING TO LOSE THE DEPLOYING TEAM!*** Employment of a RETRANS team is a combat operation and should be organized as a combined arms team. Compartmentalizing RETRANS team employment as an S6-only operation is a formula for disaster.

There are alternatives for RETRANS team employment. This article will suggest alternatives and discuss the challenges associated with SINCGARS RETRANS operations under combat conditions, and recommend solutions to battalion S6s for planning successful RETRANS operations. While the focus is on RETRANS team operations, many of the concepts and tactics, techniques, and procedures (TTP) apply to any signal team that is employed remotely, including radio access unit (RAU) teams and line-of-sight radio relay teams. This article is divided into two sections: RETRANS planning as it relates to the Military Decision-Making Process (MDMP) and detailed planning of RETRANS operations.

RETRANS PLANNING AND THE MDMP

The MDMP is an established and proven analytical method for the commander and his staff to develop estimates, plans, and orders. The MDMP has seven steps:

1. Receipt of Mission
2. Mission Analysis
3. COA (Course of Action) Development
4. COA Analysis (War Game)
5. COA Comparison
6. COA Approval
7. Orders Production

MDMP encourages thoroughness, clarity, judgement, logic, and professional knowledge to reach a decision. If done properly, the result is a coordinated, integrated, and synchronized operation. The MDMP minimizes the risk of overlooking critical aspects of an operation.

Let's examine how signal integrates with a maneuver unit's MDMP by discussing some common pitfalls in signal planning. Remember, RETRANS planning is a sub-component of signal planning.

Two SINCGARS RETRANS vehicles supporting a recent mission rehearsal exercise (MRE) at the JRTC.

The commander's guidance lacks detail (Step 15 of Mission Analysis).

After the staff completes its mission analysis brief, the commander provides the staff with enough additional guidance (preliminary decisions) to focus staff activities in planning the operation. By doctrine, the commander's guidance identifies decisive points, addresses courses of action to consider or not consider, and contains both initial Commander's Critical Information Requirements (CCIR) and reconnaissance guidance. Most commander's guidance is fairly detailed. In-depth commander's guidance allows the staff to complete the plan more quickly and efficiently. However, commander's guidance often lacks detail in the area of command and signal.

If the commander does not like to issue command post (CP) positioning guidance or address the position of the commander during his commander's guidance, the S6 should request this information. At a minimum, the S6 will need to understand the commander's intent on CP location, function, capabilities, and succession of command. In many maneuver units the S6 writes Paragraph 5 (Command and Signal) of the operations order, and he will need this basic information to write that paragraph. Without it, he will be unable to support course of action (COA) development, and will probably end up trying to hastily integrate command and control (C2) and RETRANS into the operation just prior to orders production.

Often during the commander's guidance (following the mission analysis briefing) the commander will say, "SIGO, make sure we deploy the RETRANS." While this is doctrinally correct, determining retransmission requirements should normally be a product of COA development. Most maneuver commanders do not provide commander's guidance in sufficient detail to address integration of retransmission assets, and are not familiar enough with signal capabilities and limitations to employ RETRANS assets.

Signal COA development not integrated into maneuver COA development (Step 3 and 4 of COA development).

After receiving the commander's guidance, the staff develops COAs for analysis and comparison. Doctrinally, there are six steps in COA development: Analyze relative combat power; Generate options; Array initial forces; Develop scheme of maneuver; Assign headquarters, and Prepare COA statements and sketches. The scheme of maneuver provides depth to the battle and governs the design of supporting plans or annexes. Signal COA development should be integrated into maneuver COA development. ***Want to know why?***

! The MDMP is a juggernaut. If you do not conduct signal COA development during maneuver COA development, the process will be too far along to catch up later.

! COA development is fatal. Why do we say "fatal?" Because once all of the COA statements and COA sketches are completed, your unit will fight one of those COAs. Doctrine states that a COA can be discarded during wargaming, but reality states that the S6 does not have the horsepower to discard a COA during wargaming. If a given COA is not feasible for command and signal, it must be identified during COA development. After that you may be stuck with it.

! Allocation of space and resources are often implied during maneuver COA development. The earlier you reserve assets, the better.

CP locations and RETRANS sites do not appear on the COA sketch (Step 6 of COA development).

COA statements and COA sketches are the final products of COA development. The COA statement must clearly portray how the unit will accomplish the mission and explain the scheme of maneuver. The sketch provides a picture of the maneuver aspects of the COA. Together the statement and sketch cover who (generic task organization), what (tasks), when, where, how (method), and why (purpose) for each subordinate unit. They also highlight any significant risks and where they occur. The COA sketch should include location of command posts (required by doctrine) and RETRANS sites (see **FM 101-5-1**, ***Operational Terms and Graphics***, Chapter 4, page 4-22, for a RETRANS station's graphic symbol). If RETRANS sites are not on the COA sketch, then RETRANS operations will probably be overlooked or insufficiently examined during COA analysis (wargaming).

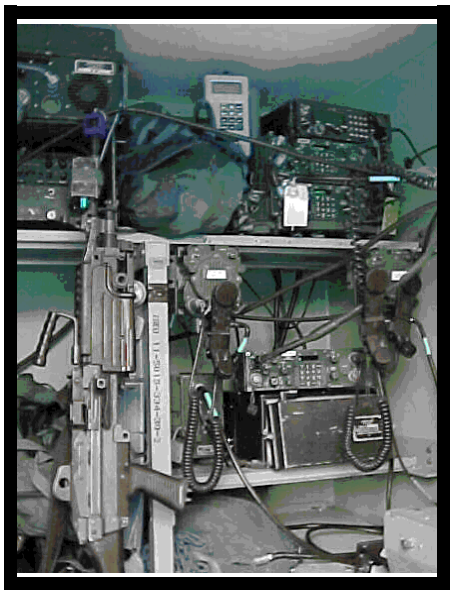
DETAILED RETRANS PLANNING

This section will address considerations that influence the RETRANS plan. In developing the RETRANS COA, the S6 should consider each of the following areas.

Be the Enemy

The position of your RETRANS should be unpredictable. If you try to put your RETRANS team in the optimal location, you will probably encounter the maximum number of enemy. The enemy analyzes the battlefield and researches where they believe your command and control (C2) nodes will be positioned. There is some risk in using an electronically marginal location, but the benefit is that the enemy is less likely to template that location as a RETRANS/C2 site. Somewhat degraded C2 is better than no C2.

When planning for RETRANS team employment, maintain your focus on the enemy situation. Epic battles have been fought over a single piece of high ground; the fight for a RETRANS site could be harder than the fight for the objective.



A SINCGARS RETRANS installed in an S-250 Shelter. This team was well equipped. Pictured are an M249 squad assault weapon (SAW), a Global Positioning System (GPS), an AN/GRC-193, an AN/PSC-5, an AN/VRC-92, and a AN/PRC-119. The team also had a second AN/VRC-92, two power supplies, and a multi-meter.

To remote site or not to remote site -- that is the question.

Co-locating a RETRANS team with another asset is generally a good idea. Notice that it is generally a good idea. A RETRANS team in a light infantry brigade headquarters and headquarters company (HHC) has two personnel by the modified table of organization and equipment (MTOE). They will have difficulty defending against anything larger than a Level I threat. RETRANS teams should avoid engagements: "Hide with Pride" should be the motto of all RETRANS teams. In many cases, teaming up with another asset is the only way to survive. Co-locating the RETRANS team also eases logistic problems such as casualty evacuation. Have you ever tried to evacuate a casualty single-handedly? A drawback in co-locating a RETRANS team is that you have little control over the assets with them. Consider a friendly asset carefully: it may be an enemy high-payoff target (HPT). The RETRANS team could suffer significant collateral damage. The Q-36 radar will be well defended, but it is also an enemy magnet. Find another neighbor!

Always remember that the conditions that require you to employ RETRANS will probably apply to other units in the combat team. Who else will need to use RETRANS to support this operation? Can you co-locate your RETRANS team with theirs? The daily S6 conference call is a great opportunity to synchronize RETRANS team missions.

How do I get there from here?

While a RETRANS team can "Hide With Pride," it cannot hide during tactical movement. RETRANS teams generally incur increased risk when they are on the move. How do you mitigate this risk? First, remember that any time your RETRANS team leaves an approved route, you are now embarking on a route clearance operation. Most RETRANS teams are not trained for route clearance. You will have to work closely with the S2 and the staff engineer to manage the risk if your team leaves an approved route. Second, even if your team is traveling on an

approved route, make sure you know the last time the route was "proofed" (confirmed to be clear). This means knowing the last time that vehicles successfully navigated that route without an ambush or mine strike. Teams are encouraged to map every mine strike that occurred on the route in the last 72 hours (minimum), and track the time those strikes occurred (pattern analysis). An armed escort is mandatory; three cargo HMMWVs (high mobility multi-purpose wheeled vehicle) with two personnel per vehicle and no crew-served weapons is not "armed." Air insertion of RETRANS teams is another proven technique, especially for dismounted teams, but you should carefully explore the signature of the insertion method and all of the logistics requirements.

There's no place like home…

Don't forget recovery of the team after the mission is complete! A remote RETRANS team in an isolated area with no access may enjoy excellent survivability. Ensure that you build recovery of RETRANS assets into your plan. In some situations, the recovery of the teams may be so difficult that it will cause you to change the rest of the plan. The RETRANS plan is not complete until it includes recovery or exfiltration of the team.

Semper gumby

Plan for alternate sites. Mother Nature and the enemy will exercise their right to vote. Notice that we said plan. Simply identifying a second location is not a plan. You have to consider movement, force protection, logistics, and operations security (OPSEC) for the alternate site. All of these considerations may be significantly different at the alternate location. Establish conditions to trigger movement to the alternate site, and ensure that both the team chief and the approving authority understand those conditions.

Slumber party massacre

Soldiers at a remote site will have to sleep. A non-doctrinal technique often used at remote RETRANS sites is to "***Sleep Away"*** from the vehicle. Some units even set up an ambush on their own RETRANS vehicle. Another technique employed at remote RETRANS sites is the "***One 31U RETRANS team."*** It only takes one 31U combat communicator to establish communications at a RETRANS site; some units will fill the remainder of the team with 11Bs (Infantrymen). A benefit of this technique is that if the RETRANS team is compromised and destroyed, you do not lose all of your 31Us, a low-density military occupational specialty (MOS) in an infantry unit.

When is the last time you talked with your RETRANS team? Or do you know your team is dead?

Unfortunately, once a RETRANS team deploys from the TOC, they are usually "alone and unafraid" on the battlefield. S6s and communications chiefs do not think through C2 of their team. A proven technique is to ensure that your team deploys with formats for standard reports, a report schedule, and an AN/PRC-119 radio (man-pack SINCGARS). The team submits scheduled reports and SALUTE reports by using the AN/PRC-119 across their own RETRANS equipment. Sure, the team will clog the net for a few seconds while they make their report, but using a format will dramatically reduce the time they are on the net. This technique is especially important if the team is RETRANSing from frequency hop to single channel (you can't hear traffic at the RETRANS in this mode). The additional AN/PRC-119 gives the team a spare radio, and it is a great tool for testing their equipment. The current trend at JRTC is that the S6 only gets a "report" from the RETRANS team when it stops working. The reason for outage: enemy contact is not a good thing.

Don't leave home without it …

A RETRANS team needs a Precision Lightweight Ground Positioning System (GPS) Receiver (PLGR). The team may navigate like Lewis and Clark at Home Station, but they will need a PLGR anywhere else in the world. Actually, Lewis and Clark were lost most of the time. Given the choice, they would have taken a PLGR. Make sure the RETRANS team takes one.

Bring jumper cables. Vehicles are relatively common on the battlefield. Jumper cables are not. Live soldiers with dead vehicles soon end up dead.

Should you bring an automated net control device (ANCD)? Yes, if you want to keep communicating. If you run the RETRANS vehicle's batteries down with the radios running, you will lose your communications security (COMSEC) fills. We recommend that you have one team member carry the ANCD, while a second team member carries the cryptographic ignition key (CIK). Ensure that your team has solid over-the-air-rekey (OTAR) skills and uses the cue and man frequencies.

Deploy your RETRANS team with a "risk kit." A suggestion is a spare OE-254 feed cone, spare co-axial cable, spare RETRANS cable (CX-13298), spare handsets, and other goodies. Remember that any two SINCGARS radio-transmitters (RTs) with a RETRANS cable can function as a RETRANS. Order a RETRANS cable for each dual long-range SINGARS radio system (AN/VRC-92) on your unit's MTOE.

The vehicle being used as a RETRANS in the first photo was actually the BN S3's C2 HMMWV. See the importance of having spare CX-13298 (RETRANS) cables?

A combat lifesaver (CLS) with a complete -- read inventoried -- CLS bag is mandatory. Pay attention to Class VIII. Packing additional saline bags is a good idea. Ditto for calamine lotion. A team member who is allergic to bee stings must have a bee sting kit or risk derailing the RETRANS operation. He may also die.

Estimate enough Class I for the operation and double it. Never deploy a RETRANS team with less than five days of supply (DOS) of Class I and water.

FM 11-43, *The Signal Leader's Guide,* has a great checklist for RETRANS employment. Conduct an inspection by ***Troop Leading Procedures*** (**GTA 7-1-38**) and include a backbrief and rehearsal (react to contact, CASEVAC, react to mine strike). Require the RETRANS team to set up their OE-254s and pre-combat check (PCC) equipment in system prior to deploying.

SUMMARY

When SINCGARS RETRANS planning is integrated into the MDMP, the chance of successfully accomplishing the RETRANS operation greatly increases. Whether they realize it or not, the other officers on the battle staff will accept RETRANS team employment as a combat operation. This assertion applies to both combat missions and stability and support operations (SASO).

Become familiar with **FM 11-32,** ***Combat Net Radio Operations***, **FM 11-43,** ***The Signal Leader's Guide***, and **FM 101-5,** ***Staff Organization and Operations***. **FM 11-43** is especially good because it will help you with site selection (Chapter 5, Section III), tactical movement (Chapter 5, Section II), and signal site security (Chapter 5, Section IV). Your own soldiers will clue you in on TTPs not found in the manuals, such as covering the head of a sledgehammer with empty sand bags so that you do not have metal-to-metal contact while pounding in antenna stakes.

A final disclaimer: This article is intended to be a RETRANS operations primer, not the definitive work on the subject. Intentionally left out was a discussion of some important battle staff members, such as the fire support officer (no fire areas and fire support planning) and air defense artillery officer (enemy air avenues of approach), and the importance of a SINCGARS equipment matrix. Ladies and gentlemen, start your wargaming.✪

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* The authors wish to acknowledge the contributions of the JRTC Signal Team: MAJ Thomas Hood, CPT Roger McDonald, SFC Rafael Gonzalez, SFC Daniel Padilla, and SFC Jaudon White.

CHAPTER 6

Intelligence Scouts: REMBASS and Battlefield Surveillance

by SSG (P) William T. Beckman

The Leesville Urban Group (LUG) had been using the meadow as a landing zone (LZ) for aerial resupply and staging area for several weeks. Bad weather and bad luck had hindered efforts to catch them in the area. Human intelligence (HUMINT) sources had reported that a new LUG advisor was due to arrive in the area, and that air was the most likely infiltration method to get the guerrilla leader into the area. But there were too many potential LZs to put eyes on everyone, and even using unmanned aerial vehicles (UAVs) to monitor high-priority targets, the reconnaissance and surveillance plan had too many gaps. The S2 needed another means of mounting 24-hour all-weather coverage on the less used LZs. He contacted the military intelligence (MI) company and asked to see the remote battlefield surveillance system (REMBASS) team leader as soon as possible.

Reporting to the S2, the REMBASS team leader received a warning order alerting him to the implant mission. He had several potential LZs to cover, so the mission would be by aerial insertion. The key consideration was to "get in and get out." The REMBASS leader would have a coverage plan ready to execute at each LZ. He talked through the concept, and then, with the S2 in tow, made the rounds of the battalion staff. Familiar faces and personalities, coupled with practiced procedures, helped to speed the planning.

The REMBASS is a hand-emplaced unattended ground sensor system that traces its roots to the Viet Nam war. The impetus for its development came from the North Vietnamese exploitation of the Ho Chi Minh Trail to supply their war in South Vietnam. Then Secretary of Defense Robert McNamara sponsored the development of an electronic barrier to detect and help destroy those supplies before they reached the battlefield. As a high-tech solution to sealing off South Vietnam, the “McNamara Wall” failed. But it did introduce technology that improved the U.S. Army’s ability to monitor the battlefield in all weather and light conditions.

REMBASS and I-REMBASS are the follow-on technologies from the sensors used in Vietnam. They are smaller, lighter, and more reliable. More importantly, they can now classify categories of targets like personnel, wheeled vehicles, or tracked vehicles. Like the early sensors, REMBASS and I-REMBASS still have limitations. They remain hand-placed and still require radio line of sight for monitoring. The improvements in weight and transmission links have, however, greatly reduced the effects of these limitations. Monitoring can be done concurrently at the team and platoon level, offering a seamless surveillance of the brigade area of operations. More importantly, new capabilities have been added that mesh well with the hand-placed sensors. The most notable is the UAV, which can be tipped off by sensor activity at a location not on the UAV’s scheduled collection route.

However, the greatest problem employing sensors remains the same. The supported units do not understand the capabilities of the system, much like Defense Secretary McNamara. Sensors are not walls or barriers. They are not ideal as an early warning asset, often confused with the old platoon early warning sensor system (PEWS).

REMBASS is a surveillance asset that can be used for targeting and tactical warning at ranges greater than 100 kilometers. A typical battalion or brigade commander would never tell his air cavalry scouts to circle over the unit position to warn of the enemy's approach. He would have them out farther, looking to develop the tactical situation before the enemy can affect his unit. All too often that is exactly what happens to REMBASS teams.

I-REMBASS

Sensor	Description	Detection	Speed
Magnetic DT-561A GSQ	Detects movement of Ferrous metals. Provides direction and target count.	Tracked 25 M Wheeled 15M Armed pers 3M	1-24 km/h 4-108 km/h 7 km/h min
Seismic/ Acoustic DT-562A GSQ	Classifies targets by seismic or acoustic signature.	Tracked 0-350M Wheeled 0-250M Armed pers 0-50M	
Infrared DT-565A GSQ	Detects temperature difference between target and background. Provides direction and count.	Tracked 3-50 M Wheeled 3-50M Personnel 3-20M	50M, 1.7-40M/sec 3m, 0.1-2.4 M/sec

That raises the second major problem in employing REMBASS teams. As "technical" attachments, they are often looked at as another intelligence asset that requires an infantry "babysitter." REMBASS teams are "grunts with gadgets." Traditionally, the brigade combat team (BCT) commander is concerned about the safety and survivability of his irreplaceable assets. As a result, the four- to six-man REMBASS team that trains in field craft as a small element daily receives a "security platoon" for maneuver. For early infiltration, this is habitually the scout platoon headquarters. During defensive operations, a maneuver squad accompanies the team. Why attach a fire team or squad as security when the infantry's job is to close with and engage the enemy? The last thing a REMBASS team leader wants is any contact with the enemy, much less a firefight. His doctrinal movement rate opposed is approximately 1 km per hour. Like any patrol the REMBASS team goes through its own MDMP to prepare for these independent missions. The REMBASS team sergeant plans, coordinates, and executes the implant mission.

RECEIVE THE MISSION

A. DETERMINE NEEDED EQUIPMENT
   1. Personal
   2. Ammunition
   3. Class I – food and water
   4. Personal equipment
B. WRITE / ISSUE WARNING ORDER
C. REQUEST OVERLAYS FROM BN & BDE S2
   1. Reconnaissance & surveillance plan
   2. Fire support overlay
   3. Engineer (obstacle) overlay templated enemy positions
D. GATHER NEEDED EQUIPMENT
E. COORDINATE FIRE AREAS, RESTRICTED FIRE AREAS, NO FIRE AREA
   - Implant route
      a. Vehicle implant
      b. Dismounted implant
   1. Prepare vehicle (if applicable)
   2. Coordinate air movement (if applicable)
      - PZ
      - LZ
      - TIME
      - COORDINATE
      - DESIGN E&E ROUTES
      - CONDUCT SAFETY BRIEFING
      - DEVELOP OFF-LOAD PLAN
      - DEVELOP REHEARSAL PLAN
F. ISSUE OPERATIONS ORDER

The REMBASS team wants to implant sensors and go into a “hide site” or “escape and evasion” (E&E) out to friendly lines. Commanders need to realize that a 96R is not an 11B, nor is he a tactically unsound, intelligence geek behind a computer. The life of a 96R mirrors that of most long-range surveillance (LRS) elements. The teams infiltrate deep, dig in their sensors vicinity enemy avenues of approach, and establish a sensor/monitoring site. The sensor’s line-of-sight capability requires a hide site within range where the team can use its portable monitoring set to identify enemy actions. Scouts do not use a security platoon forward of friendly lines, nor does LRS. Commanders must understand that for the 96R, stealth is security. That means the REMBASS team sergeant must carefully plan and rehearse every stage of the implant mission.

IMPLANT SEQUENCE

A. CONDUCT PASSAGE OF LINES/BEGIN IMPLANT
1. Dismounted implant
- Passage of lines
- Conduct SLLS (listening halt) outside of small arms range from passage point
- Move tactically to implant site
2. Vehicle implant
- Passage of lines
- Stop 200-400 meters from implant site
- Leave security with vehicle
- Implant team moves tactically to implant site

B. IMPLANT DRILL
1. Occupy implant site by force.
2. Establish 360-degree security.
3. Implant sensor.
4. Verify code of program with PSQ-7/PMS.
5. Install anti-tampering device. (Device must be subtly designed so as to evade enemy detection, but be able to elicit proof of any tampering.)
6. Camouflage sensor site.
7. Draw sketch map of sensor site. The sketch must show proximity of sensor to landmarks and terrain feature, as well as directions (by azimuth) to other distant landmark/terrain features in the vicinity.
8. Move to the next locations.

Obviously, the commander will have concerns when a military intelligence team decides to go forward of friendly lines without security, as he would sending any unit forward. MI soldiers arriving at an infantry task force must build that confidence early. Like the Stinger team, civil affairs, or other attachments, the MI sergeant team leader must establish his credibility immediately. The commander must understand that due to equipment requirements, the REMBASS team's ALICE packs weigh from 80-100 pounds each. This will degrade maneuvering with a scout squad carrying butt packs and assault packs. The team trains for team-level maneuver. The SOPs are internal to the team, and the soldiers habitually work around the same team members. This develops an operational comfort zone for the team that the team leader must convey to the commander.

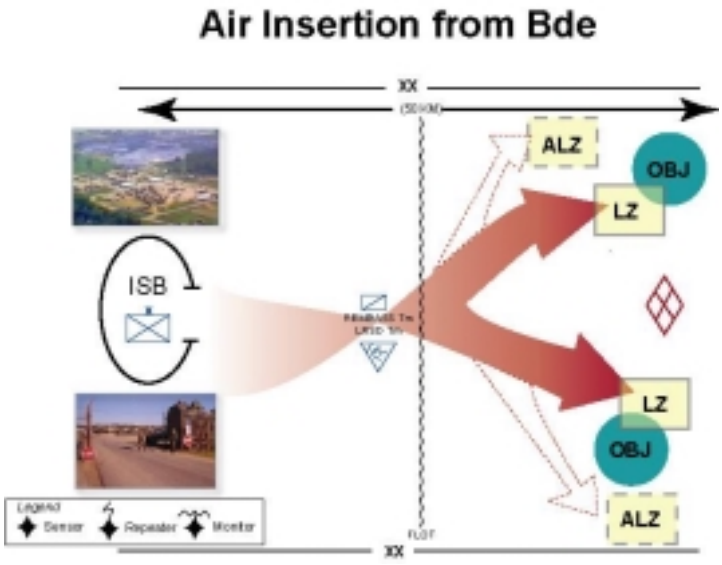


Figure 1. Air Insertion from Brigade

Education and training help develop that comfort zone in supported units. In Special Forces, an ODA (Operational Detachment A) is responsible for briefing by specialty and equipment to demonstrate their capabilities. Although a REMBASS team is not an ODA, the individual soldier has specialized skills that will contribute to the brigade's overall fight, not just to the battalion. Infantry leaders need exposure to these young soldiers, for they are the "Infantry of MI." Further demonstrations include a lane walk with sensors established to detect the commander's movement, later to be shown on the PMS display, or permitting the commander during a field training exercise (FTX) to attempt to find the team's hide site when placed within 400m of the team's monitoring site. All these tangible examples provide tangible results for the REMBASS team during employment.

Such a demonstration would highlight why REMBASS teams need to deploy forward of friendly lines. A REMBASS sensor does not differentiate between friendly or enemy movement. A dismounted person or a wheeled vehicle is the detection parameter, in many cases. REMBASS teams intermixed with friendly forces waste the capability of the system. The REMBASS team needs to work in an area outside the limit of friendly forces maneuver. Then, every activation will be enemy. Yet commanders, concerned about soldiers forward of friendly lines, tend to deploy what is a deep reconnaissance capability around their brigade support area (BSA). REMBASS cannot confirm which heavy-wheeled vehicle just moved over grid 12345678 vicinity the BSA. The vehicle could be friendly or it could be enemy. Friendly patrols will activate the sensors as well. REMBASS should help clarify the situation for the commander, not confuse it. Would the division commander employ long-range surveillance (LRS) teams to cover the division rear command post (CP)?

Deep and early infiltration is key to REMBASS success. Infiltration should be accomplished as early as D-3 and as deep as 15-30 kilometers by airborne insertion, HELO insertion, or fast rope. A divisional LRS team has a doctrinal depth of 25-50 kilometers. Many REMBASS teams conduct habitual training with LRS teams. They have some of the same standing operating procedures (SOP) and use the same tactics, techniques, and procedures (TTP). By using the same infiltration platform as LRS, the REMBASS team gets in simultaneously, and can either cover named areas of interest (NAIs) in the deep collection plan or serve as a trigger for LRS eyes-on validation and spot reporting.

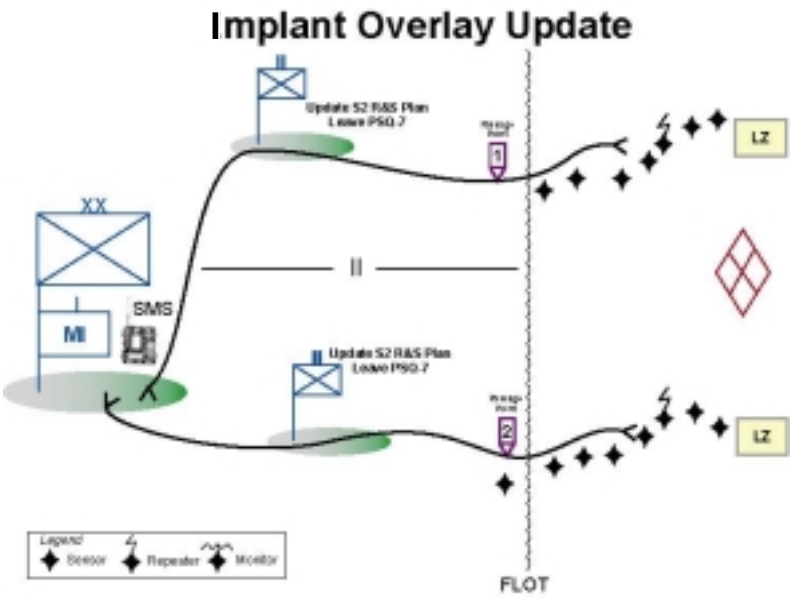


Figure 2. Implant Overlay

Commanders receive real-time intelligence from deep REMBASS. Transmissions of sensor activations are one nano-second (one-one thousandth of a second). The sensor signal is boosted through the use of repeaters. You could send one sensor activation around the world by use of multiple repeaters. With the correct communications platform, the REMBASS team leader could easily relay this intelligence to any airborne C2 platform or the en route satellite communications (SATCOM) package used by the 82nd Abn Div, SECOMPS. This setup provides the commander with a picture of the enemy maneuver in his sector prior to a forced entry and allows him to react in a timely manner.

Exfiltration for the REMBASS team is as critical as infiltration. Keep in mind that the team is a four- to six-man element moving forward of friendly lines. Fratricide often occurs at JRTC when the team comes in contact with friendly forces. The preferred method for extraction is by helicopter, although this is often impossible. Passage of lines is one of the most difficult tasks under the best of situations, and REMBASS teams habitually move at night along unlikely enemy avenues of approach. The stationary and moving element must ensure they have current frequencies and call signs. The passage must be coordinated at the lowest tactical level possible. While the MI company commander at the brigade TOC should be aware of the passage, the line unit must also be informed. Units that habitually work with REMBASS teams forward must develop the proficiency needed in this delicate operation.

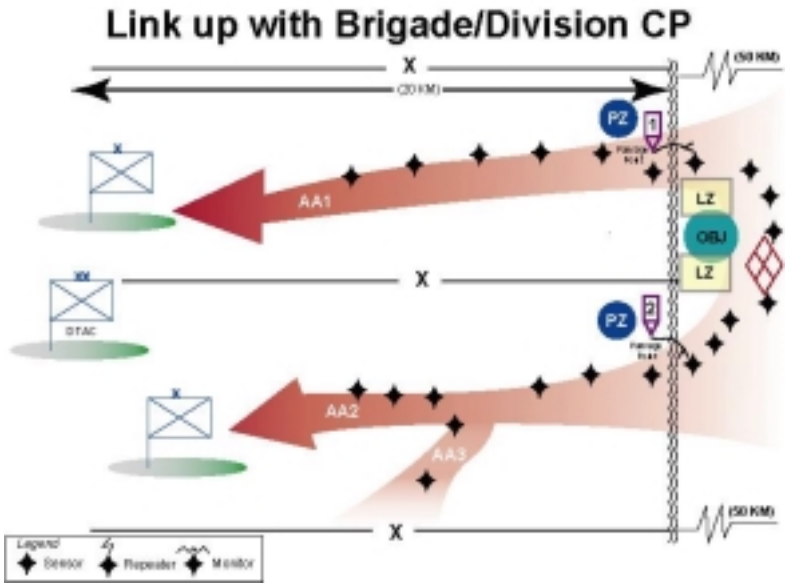


Figure 3. Link up

One might think the team could remain in place during the entire battle, but that would waste this asset. A single portable monitoring set can receive ten identification (ID) codes simultaneously, painting an electronic picture of the entire security zone on one small, portable display easily located with the commander. Teams carry a basic load of sensors. Due to weight, however, they must resupply sensors, batteries, water, and other equipment after 5-6 days. The teams require early exfiltration after sensor emplacement in order to prepare their additional equipment for follow-on operations. REMBASS equipment also requires extensive pre-combat inspections to ensure it operates properly and the team is ready to deploy immediately following the warning order of the next implant mission.

REMBASS offers the supported commander constant all-weather deep surveillance of the battalion. To capitalize on that asset, the commander needs to know what it can do and how REMBASS teams operate. This knowledge is founded on habitual relationships. REMBASS teams should know not only the S2s in their habitually supported battalions, but they should know the S3s, the fire support coordinators, and the maneuver leaders. You should never go to war with a stranger at your shoulder. REMBASS teams that are not integrated into a unit before a rotation at JRTC will remain strangers to that unit. Let's go back to our tactical scenario.

The LUG guerrilla leader was happy to be on the ground as the HIP lifted off behind him. He had a raid to plan, and the target was a local village leader who had not been cooperating. Wasting no time, he and a small escort moved off to a rally point on a knoll just north of the meadow. As the squad-sized element moved out, a small electronic device had already alerted the U.S. battalion headquarters 20 kilometers away that there was human activity on the suspected LZ. The guerrillas headed to the rally point and established a small perimeter there while the newly arrived advisor issued a warning order for the coming raid. Even as he began speaking, a seismic sensor told the Americans that the knoll had indeed been occupied as a natural rally point near the LZ. Minutes later hot American steel put an end to the LUG orders group.

CHAPTER 7

AVENGERS in the Direct Support (DS) and General Support (GS) Role

by SFC Larry Townsend and SSG James C. Fournier

The Avenger platoon had been in general support of the brigade, but that mission had just changed. The platoon leader took the order to shift to direct support of the left flank battalion as the unit prepared for defense. Both the platoon leader (PL) and the platoon sergeant (PSG) were new to their jobs. The platoon leader looked at the map while the platoon sergeant did a casual check of the teams. Fifteen minutes later, the platoon leader arrived in his new sector, and an hour later he thought he was ready to fight. He had just stepped into the battalion tactical operations center (TOC) when the first enemy aircraft struck the command post (CP) without warning.

Support relationships are not "casual"

Support relationships determine how the Avenger platoon accomplishes a variety of missions. There are four support relationships to define the responsibilities of the supported and the supporting units. Of the four, this article addresses only direct support (DS) and general support (GS). Platoon leaders and platoon sergeants must understand their roles and that of their teams in providing air defense coverage in each support relationship. Observations at the Joint Readiness Training Center (JRTC) consistently point to challenges in the areas of command and control (C2), combat service support (CSS), and force protection as they apply under each support relationship.

C2 is not a blind bingo game

FM 44-44, ***Avenger Platoon, Section, and Squad Operations***, defines command and control as the exercise of authority over assigned forces to accomplish a mission. The platoon leader must consider personnel, equipment, and procedures in planning, directing, coordinating, and controlling those elements to achieve the mission. Proper C2 allows for effective engagement of hostile aircraft and protects friendly forces. It facilitates the integration of all ADA weapons to blend firepower to achieve mission success.

Observer/controllers (O/Cs) report confusion in ADA C2. Teams do not know who controls them or their support relationship. Often teams end up as close as 100 meters to other teams with the same platoon leader. This confusion takes a toll on the effectiveness of the fire units and on the overall ADA plan. A complete C2 plan can avoid these problems. First, the platoon leader must understand responsibilities in either a DS and GS role. In the DS role, the platoon leader is responsible for the command and control of his platoon. He develops the air defense plan in accordance with priorities of protection from the supported commander and the supported unit scheme of maneuver. Then he integrates his plan into the supported unit's operations. The platoon leader should submit his plan to the ADA commander for approval. This ensures the ADA commander that the platoon plan is integrated

with the rest of the battery. This improves overall air defense synchronization of firepower. In the GS role, the ADA commander is responsible for the air defense plan based on the supported commander's priorities. The platoon leader retains C2 over the GS platoon based on guidance and priorities set by the ADA battery commander.

Platoon rehearsals and backbriefs can reduce team level confusion over C2. A good rehearsal adds to the success of any mission. It amplifies the platoon plan and helps teams better understand their responsibilities during the mission. It provides for finalizing details, such as team resupply, team reporting channels, casualty evacuation, or other areas of potential confusion.

Air intelligence preparation of the battlefield (IPB) refinement never stops

Often there is a misconception that once the air portion of the IPB is complete, the air threat has been addressed. IPB is an ongoing process to evaluate existing air IPB, develop new air avenues of approach, and synchronize air event templates. Teams aid in this process by battle tracking aircraft and reporting any patterns discovered in enemy flights. After this pattern analysis is complete, the air defense coverage is adjusted to defeat these avenues of approach.

O/Cs note that Avenger platoons sometimes interpret the orientation of their fire units down likely avenues of approach too strictly. This has caused problems in the overall AD design of 360-degree coverage. Often, all fire units end up with fires massed in the same direction.

The platoon leader in a DS role develops the air IPB utilizing mission, enemy, terrain, troops, and time available (METT-T) and observation, concealment, obstacles, key terrain, and avenues of approach (OCOKA). The air IPB is then integrated into the supported unit's S2 ground IPB. The platoon leader articulates to the commander the enemy air threat, characteristics of the aircraft expected, enemy doctrine, and the supported unit's scheme of maneuver. This is used to develop a course of action and then briefed to the supported unit commander. That allows the ground commander to understand and counteract the threat as it applies to his ground effort. In the GS role, the ADA battery commander develops and issues the air IPB. The GS platoon leader then narrows the battery IPB for his platoon's area of operations.

Early warning is for everyone

Early warning alerts ADA fire units and the supported unit to potentially hostile aircraft in the platoon's area of operations. The use of hand-held terminal unit (HTU)/simplified hand-held terminal unit (SHTU) gives teams real-time tracking of aircraft but in order to work it must be oriented and integrated into the team's position. This allows teams to effectively track suspected hostile aircraft. Units with HTU do not exploit the full capabilities of the system, mostly because they do not know what the system can do for them. The HTU can track the status of missiles, .50 cal rounds, operational state of the team and its vehicles, identification friend or foe (IFF), and other mission critical equipment. If loaded, this information automatically transfers in real time to the fire unit superiors. This helps the platoon leader battle track his teams.

If HTU/SHTUs are not operational, early warning has to come via the directed early warning (DEW) net or from the C2 node. This information is time sensitive and should be quickly disseminated. Even a few seconds delay in dissemination can mean a major change of the actual position of the aircraft. The DS platoon leader is responsible for providing ADA fire units and the supported unit with timely early warning. Platoon leaders should adjust TOC operations to accomplish this mission. He should also use local air defense warnings (LADW) to alert the supported unit to an impending air attack.

In the past, some rotational units have adroitly used TOC drills to alert units to incoming aircraft. That is not always the case. Platoon leaders often announce the warnings in the supported unit TOC but fail to follow up. In the rush to defeat enemy air, ADA leaders sometimes forget how critical early warning is to a supported unit. They must impress upon supported unit commanders the importance of early warning combined with passive air defense to protect their unit. In the GS role the platoon leader gets his early warning from the battery CP and the DEW net. He rebroadcasts the warning to the teams. If possible, the teams should also monitor the DEW net. If not, the teams should place the DEW net as a CUE frequency in their radios. This will alert them when there are transmissions on the DEW net.

Poor TOC operations create operational headaches

A smooth TOC operation is key to the success of the platoon. The TOC is the brain for the fight. It receives information, processes it, and disseminates it to all fire units on the battlefield. The platoon leader in the DS role must cultivate a good working relationship with all staff sections within the TOC. This will assist the ADO in contributing to the staff and improve the situational awareness of the fire units. Often fire units on the battlefield lack current information, such as engineer graphics, mine overlays, suspected contaminated areas, and the position of friendly and enemy forces. The supported unit TOC is the main source for such information. The platoon leader should aggressively gather and disseminate this information to the fire units to increase their battlefield survivability.

Situational awareness is a continuous process dependent on cross-talk between teams and the platoon leader. O/Cs note, however, that information flow within the Avenger platoon is often slow or nonexistent. ADA fire units can be an outstanding source of intelligence. Size, activity, location, unit, time, and equipment (SALUTE) and engagement reports from fire units given to the S2 help picture the battlefield for current and future operations. The platoon leader needs to know the operational status of his teams and pass that on to the S3. If the platoon suffers battle losses, the platoon leader has to adjust his AD coverage quickly. He must articulate to the commander his current strength so the commander can make an informed decision.

Avenger platoons also need to increase the cross-talk between teams. A platoon standing operating procedure (SOP), if used, will facilitate the timely flow of this information. Some units use twice-daily platoon and battery conference calls to maintain situational awareness with great success. In the GS role, information flow is the same, but is sent to the battery CP. The GS PL/PSG has to establish a platoon CP centrally located within the platoon area of operations (AO) from where he can effectively command and control his fire units.

Communication is vital to the success of ADA units. Many platoon leaders or platoon sergeants do not use the OE-254 because it is time consuming or not practical. This has caused lost contact with certain teams and, thus, loss of C2. Platoon leaders should develop an SOP of when and how to set OE-254 during mounted or dismounted operations. Guidance for establishing a platoon CP and providing command and control are found in these mission training plans (MTPs): **ARTEP 44-117-21-*MTP for Avenger***, **ARTEP 44-117-31-*MTP for Stinger***, and **ARTEP 44-177-14-*MTP for BSFV***.

To shoot it, you have to have it

To maintain combat effectiveness, the AD platoon must be supplied. Maintaining supplies and ensuring maintenance for the platoon are platoon sergeant responsibilities. The platoon sergeant must use all means to ensure his teams are resupplied for continuous operations. Prior to deployment, Avenger platoons submit logistics packages (LOGPACs) to the task force S4 and support platoon leaders. In the defense, platoon sergeants must

anticipate additional Class IV and V requirements for increased survivability. LOGPACs are an efficient way to resupply teams located close to or with an element of the task force.

This means of resupply is seldom used or understood by platoon sergeants because they seldom attend CSS rehearsals prior to combat operations. The DS platoon sergeant must ensure that needed supplies are ordered as part of the supported unit's LOGPAC. Attendance at CSS rehearsals will explain how LOGPAC operations are conducted by the S4 in a tactical environment. This ensures the smooth transaction of all classes of supplies to team level. An air defense representative from the battery's rear command post in the BSA should verify LOGPACs prior to departure. The platoon sergeant meets the LOGPAC upon arrival at the task force combat trains. He ensures that supplies are distributed to the teams. Teams in the DS role are not aggressively acquiring supplies from their supported units. The platoon sergeant needs to ensure teams are linked up and coordinating with the supported unit. Teams can establish a good working relationship with supported units by using company tactical (TAC) SOPs. This makes it easier for the team to acquire supplies and takes a lot of pressure off the platoon sergeant.

Another alternative to resupplying teams is cross-leveling. Cross-leveling allows the platoon sergeant to maintain combat effectiveness by redistributing supplies within the platoon. It is not used as a resupply technique, but as a way to stretch existing supplies. Team leaders need to conduct proper pre-combat inspections (PCIs) and pre-combat checks (PCCs) to ensure that teams have all needed equipment and supplies for operations and to identify any shortages. Platoon sergeants should supervise PCIs and PCCs and follow up with cross-talk and effective battle tracking.

It is imperative that the platoon sergeant circulates to maintain situational awareness of his teams and to improve his battle tracking. Battle tracking provides the platoon leader and platoon sergeant with current information on the platoon's combat strength. Some things that need to be tracked are current team positions, task organization, engagements, current levels of supplies, and mission. The rule of thumb is to track all information that allows the leader to monitor combat effectiveness during all phases of the battle. Battlefield circulation also increases team morale. The platoon sergeant should also take this opportunity to program IFFs, a common problem for many due to time restraints or priorities. The platoon sergeant must have a plan for IFF reprogramming. Ideally, teams should have two IFFs, one with the team and the other with the platoon sergeant. This allows the platoon sergeant to program one IFF and swap it during circulation.

Force protection

Through force protection commanders seek to achieve victory with minimal casualties to their forces and assets. Force protection involves everyone. Air defense assets are high-priority targets (HPT). Therefore, force protection through active and passive air defense is important to the survivability of Stinger and Avenger teams and what they defend. Passive air defense is the easiest way for the team and supported unit to protect against air attack. Yet, teams often do not use natural camouflage or cover at the team position. When occupying a team position, the team commander should use OCOKA to establish the best firing and fighting position possible. He should then camouflage these positions with natural camouflage. Concealing vehicles is a major problem for teams, especially Avengers. Avengers need to tone down their turrets, even in a defilade position. Defilade increases fire unit survivability and should be used whenever possible.

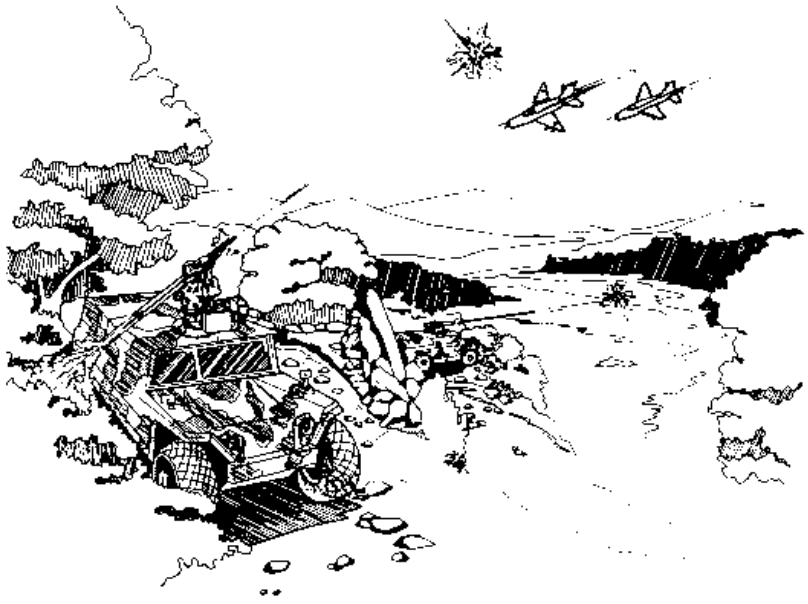
The DS/GS platoon leader must ensure that his fire units are on the engineer survivability plan. The platoon leader must be aggressive in getting this support, rather than assuming his teams will be dug in. Teams do not use alternate positions after engaging aircraft or when their position has been compromised. They stay in the same

location for three to four days at a time. Teams should move to their alternate positions after aircraft engagement. A good technique is to rotate the teams between their alternate and primary positions. This keeps the enemy guessing where the air defenses are located.

O/Cs commonly see teams at "red/tight" searching and scanning, while the supported unit conducts operations without knowing that an air attack is imminent or in progress. In the DS role the team commander should set up an air attack warning system to alert the supported unit to the incoming threat. The supported unit should know the battle drill to take after the alert. They can aid the air defense teams by providing combined arms for air defense (CAAD) or seek cover until the threat is terminated or has passed. When teams are not at "red/tight," they tend to get relaxed and forget about local security. They eat chow on top of their foxhole or vehicle in plain view of the enemy, instead of inside the foxhole or by other tactical means. With no local ground support, teams need to keep a constant eye on their surroundings for any enemy activity. This will allot the teams enough reaction time to engage the enemy with direct or indirect fire or to move out of the area.

To DS or GS: What to do is the question

The air defense platoon has many things to consider when operating in the DS or GS role. The platoon sergeant, platoon leader, and team leaders have to know what needs to be done in each role. This requires flexibility, cohesion, and the use of platoon SOPs developed through intensive training at Home Station. JRTC is a great training environment to evaluate a platoon's SOP and make changes as necessary. The key to success for Avenger platoons is to understand and apply employment doctrine under current field manuals (FMs) and technical manuals (Tms).✪



CHAPTER 8

MET and the Mortars: Solving the Puzzle

by SFC Chris Chesley and SFC Steven Payton

The enemy attack came hard against the two infantry battalions set in a hasty defense along the ridgeline. Indirect fires rained steel, smoke, and white phosphorus on the attackers, killing the infantry, blinding their gunners, and burning their light vehicles. Though effective, the fires in closer were not as dense as they should have been. In particular, the battalion and company mortars were not achieving the accuracy necessary to build that final wall of steel in front of the U.S. positions. Ideally, the fires should have broken the enemy before they could engage the U.S. infantry. That would not be the case in this fight, all because the mortars had not received the correct meteorological (MET) data.

If the above sounds unlikely, think again! Observers at the Joint Readiness Training Center (JRTC) consistently report that battalion fire support elements (FSEs) fail to deliver accurate and timely meteorological (MET) messages to battalion and company mortar sections. That failure means that maneuver commanders do not get full benefit of their organic fire support systems.

Accurate MET equals accurate fires

Mortar sections must get MET messages if they are to provide accurate fire support. Meteorological messages provide information needed to compensate for the effects of weather on the projectile in flight. The battalion FSE is responsible for accurately providing MET data to mortar sections in a timely manner. Firing data must compensate for variations in air temperature, air density, and the speed and direction of the wind (**FM 6-40*, Tactics, Techniques, and Procedures for Field Artillery Manual Cannon Gunnery,*** Chapter 11). The MET section generates several types of surface-to-surface MET messages for the fire support system. Those include computer, ballistic, and target acquisition MET messages (**FM 6-121, *Tactics, Techniques, and Procedures for Field Artillery Target Acquisition,*** Chapter 2). Indirect fire delivery assets, including artillery and mortars, use computer and ballistic MET messages.

Mortars need both MET formats

Usually a field artillery (FA) battalion disseminates the MET in a timely manner, but not in the format needed by the mortar section. Rotational units at JRTC often mistakenly believe that mortars only use a ballistic MET, not a computer MET. In fact, mortar sections use both, based on the section's needs. Mortars use the ballistic MET message when computing manual firing data off the M-16 plotting board. They use computer MET messages when computing firing data with the M23 mortar ballistic computer (MBC). Like all data processors, the MBC has been upgraded several times and that has changed its data requirements. In the early 1990's, it used the 2a processor chip and required the ballistic MET message. It was then upgraded to the 3a processor chip, which can receive a computer MET message.

Battalion FSEs must know how the mortars are computing data when disseminating meteorological data. In split section operations, the fire direction center (FDC) can use the MBC and the plotting board (**FM 23-91,** ***Mortar Gunnery***, Chapter 3) in order to have a primary and a check computer. Mortar O/Cs report that mortar FDCs often depend on the MBC and ignore the M-16 plotting board as a secondary check. Battalion FSEs contribute to this trend by not sending both MET messages, when in most situations the mortar sections must have the ballistic and computer MET. Consequently, battalion FSE personnel must understand the differences and similarities between the two messages. Moreover, they should know how to properly transmit them.

The different formats make a difference

The ballistic MET message is similar to the computer MET message. "They both determine the corrections needed to compute firing data so that the section has better accuracy and target effect without registering every two to four hours."(**FM 23-91**, Chapter 4) Both messages come in two parts, the introduction and the body. The data contained in the body lists zone heights in meters in both formats. That is where the similarities end.

As the old saying goes, "The devil is in the details," the devil in the two MET formats is in their differences. The computer MET message measures wind direction in tens of mils, speed in knots, temperature in Kelvin, and pressure in millibars. The computer MET message is recorded on DA Form 3677 and distributed via hard copy or voice, transmitted on digital systems with a SYS; MET message (AFATDS, IFSAS, BCS), and then input through a MET: CM into the MBC (see Figure 1). The ballistic MET message gives wind data in hundreds of mils for direction and speed in knots. The ballistic MET provides temperature and pressure data as well, but gives data as percents of the standard atmosphere, preinstalled in the MBC at the factory and commonly referred to as "standard MET," not a specific measurement. **These differences make it impossible to interchange the MET messages, so it is imperative that the FSE provide the correct MET needed by the mortar section** (see Figure 2).

The factory installed standard MET message contained in the MBC can be used in the absence of MET data. However, the information contained in this message assumes a standard atmosphere at sea level. According to **FM 6-16,** ***Tables for Artillery Meteorology (Electronic) Ballistic Type 3 and Computer Messages,*** the International Civil Aviation Organization defines standard atmospheric conditions as: dry air, 0% humidity; no wind, 0 knots; surface temperature of 15 deg C with a decrease, or lapse rate, of –6.5 deg C per 1000 meters and a constant temperature of 56.5 deg C between 11,000 and 25,000 meters; surface pressure of 1,013.25 mb decreasing with height; and a surface density of 1,225 grams per cubic meter (gm/m^3). Unfortunately, the actual atmosphere rarely reflects these standards. That means it is VITAL that meteorological data be applied regularly.

Get it right before it goes out!

Before the FSE disseminates an MET message, the FSE must ensure the message is valid. All too often components of the fire support system use different versions of digital equipment. These differences can inadvertently alter the information in an MET message. Human error can add to the problem when an MET message is transmitted over the radio. For that reason the MET message must always be read back to the sender to confirm the data. **FM 6-40,** ***Tactics, Techniques, and Procedures for Field Artillery Manual Cannon Gunnery,*** Chapter 11, provides guidelines for checking an MET. Knowing these guidelines makes it possible for FSE personnel to validate the MET message so the mortar ballistic computer will not reject the data or cause errors in manual computations.

Check for errors in both computer and ballistic MET message IAW **FM 6-40**, Chapter 11:

! The heading of an MET message includes important information needed to verify a MET's validity, such as the MET station location. Preferably, the MET is flown no more than 20 km from the midpoint of the trajectory and is less than two hours old. However, METT-T considered, the MET should normally be used when flown within 80 km of the midpoint of the trajectory and is less than 4 hours old.

! Check for drastic wind direction changes (1000 mils or greater) or sudden reverses of wind direction from line to line, particularly if wind speeds are more than 10 knots.

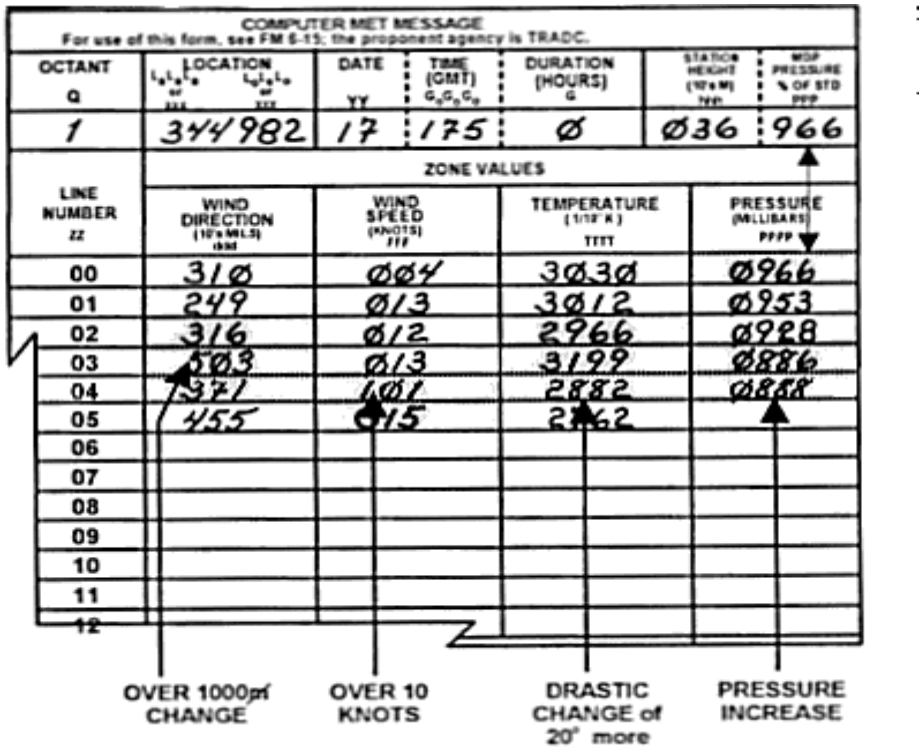
! Check severe increases or decreases (10 knots or greater) in wind speed from line to line.

! Check for a severe increase or decrease (over 20 degrees K) in temperature from line to line.

! Check for differences in identification line pressure and surface pressure. Both should match.

! Check for increases in pressure between lines. Pressure should decrease smoothly from line to line. Pressure will never increase with height in nature.

If any of the above mentioned criteria are identified, contact your FDC, or, if possible, your MET section, to verify the validity of the MET message.



Example Errors for MET message

Since a mortar round's maximum ordinate is 3,039 meters, only the first eight lines of the MET message are needed. There is no need to send the full 27 lines. However, mortar rounds travel through at least three changing layers of atmospheric conditions, affecting the ballistics of the round significantly.

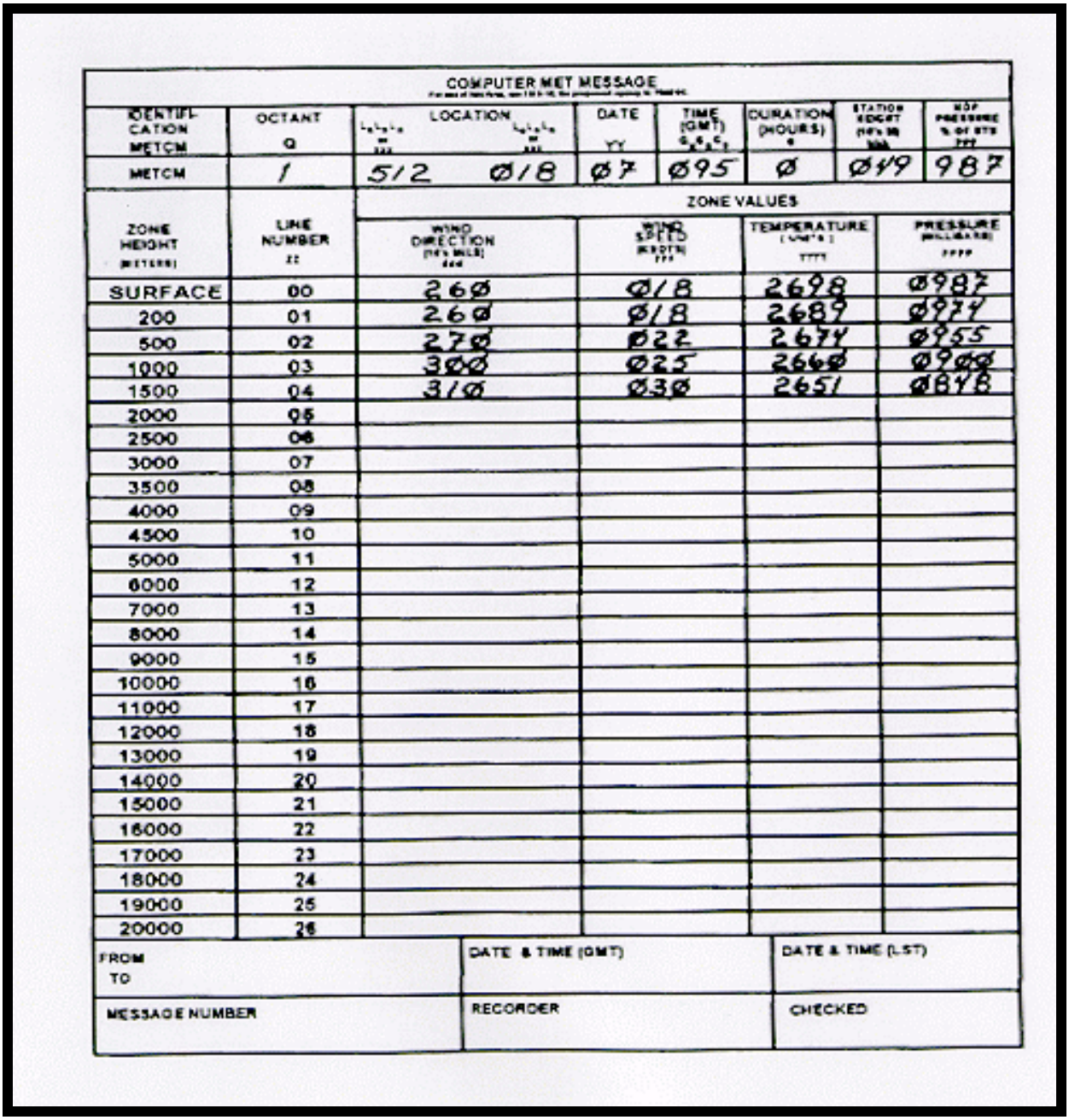
Transmission Protocols Avoid Errors

Once the battalion FSE validates the MET message, the FSE must transmit it in a format the MBC operator can easily use. Often battalion FSEs try to send MET messages to the mortar fire direction center (FDC) digitally when mortar FDCs normally prefer hard copy. Sometimes sending a hard copy is not possible and the message must be voice transmitted. If that is the case, ensure that both the sender and the receiver have DA Form 3637 for ballistic MET and DA Form 3675 for computer MET. This gives them both a common frame of reference.

The FSE should understand how the MBC operator inputs the MET message. The heading of the MET message has four six-character groups. When the MBC operator prepares to enter an MET message, he presses the "MET" key, selects "NEW" then "SEQ", waits for a group of six numbers to be sent, enters them, then presses "SEQ" again and waits for six more numbers. These refer to quadrant and latitude and longitude, or MET station location. If the battalion FSE sends an error, the MBC operator probably will not realize it. Continuing through group five brings the MBC operator to the body of the MET message. This consists of up to 27 lines of MET data, each broken into two eight-number groups. The MBC operator expects to receive the data as a series of numbers; he enters eight numbers and hits "SEQ", repeating it until complete. If the data comes any other way, it confuses him. That interrupts the flow and data is lost. Having the proper forms available at both ends before transmission can avoid such difficulties.

Conclusion: Get the MET data right and get steel on the target!

Understanding MET and its use to increase mortar accuracy is a consistent problem at JRTC. Training mortar FDCs and battalion FSEs in MET and use of the MET TTPs discussed above will help improve their ability to provide timely and **accurate** fires. The pursuit of the five elements of accurate predicted fires is constant. Battalion FSEs must aggressively obtain MET messages from the FA battalion FDC. The FSE must validate and then disseminate them in an equally timely and accurate fashion. By doing so, the FSE will increase first-round accuracy and lethality. It will also conserve ammunition and better support its maneuver forces with accurate, predictive fires.**k**



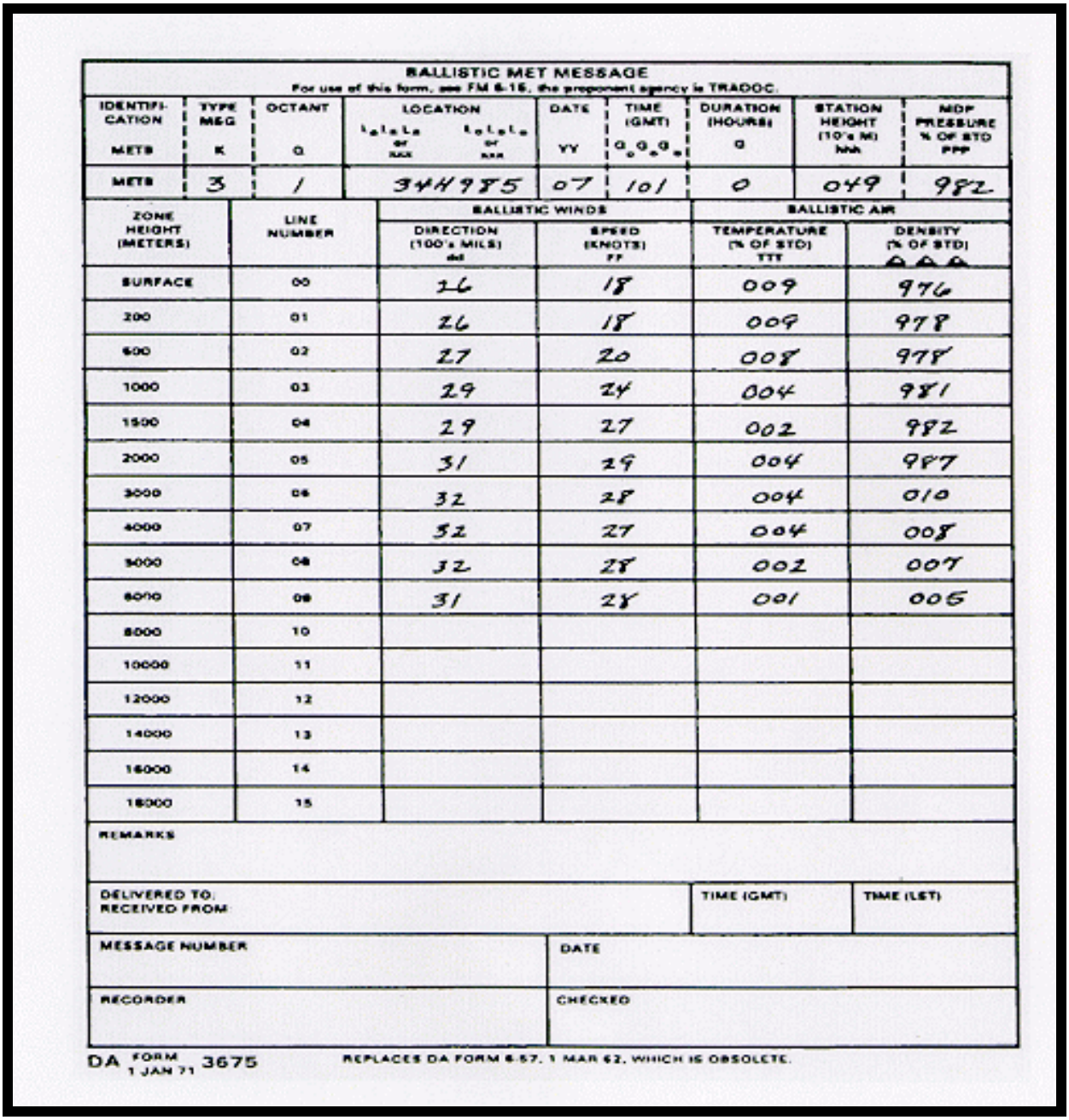
COMPUTER MET MESSAGE

IDENTIFICATION METCM	OCTANT Q	LOCATION	DATE YY	TIME (GMT) $G_nG_nG_n$	DURATION (HOURS)	STATION HEIGHT	MSL PRESSURE
METCM	1	512 Ø18	Ø7	Ø95	Ø	Ø49	987

ZONE HEIGHT (METERS)	LINE NUMBER	ZONE VALUES: WIND DIRECTION	WIND SPEED (KNOTS)	TEMPERATURE	PRESSURE (MILLIBARS)
SURFACE	00	26Ø	Ø18	2698	Ø987
200	01	26Ø	Ø18	2689	Ø974
500	02	27Ø	Ø22	2674	Ø955
1000	03	3ØØ	Ø25	2660	ØØØØ
1500	04	31Ø	Ø3Ø	2651	ØB48
2000	05				
2500	06				
3000	07				
3500	08				
4000	09				
4500	10				
5000	11				
6000	12				
7000	13				
8000	14				
9000	15				
10000	16				
11000	17				
12000	18				
13000	19				
14000	20				
15000	21				
16000	22				
17000	23				
18000	24				
19000	25				
20000	26				

FROM TO	DATE & TIME (GMT)	DATE & TIME (LST)
MESSAGE NUMBER	RECORDER	CHECKED

Figure 1. Sample Computer MET message



BALLISTIC MET MESSAGE

For use of this form, see FM 6-15; the proponent agency is TRADOC.

IDENTIFICATION	TYPE MSG	OCTANT	LOCATION	DATE	TIME (GMT)	DURATION (HOURS)	STATION HEIGHT (10's M)	MSL PRESSURE % OF STD
METB	K	O	$L_aL_aL_a$ or AAA $L_oL_oL_o$ or AAA	YY	$G_0G_0G_0$	O	hhh	PPP
METB	3	1	344985	07	101	0	049	982

ZONE HEIGHT (METERS)	LINE NUMBER	BALLISTIC WINDS		BALLISTIC AIR	
		DIRECTION (100's MILS) dd	SPEED (KNOTS) ff	TEMPERATURE (% OF STD) TTT	DENSITY (% OF STD) $D_0D_0D_0$
SURFACE	00	26	18	009	976
200	01	26	18	009	978
600	02	27	20	008	978
1000	03	29	24	004	981
1500	04	29	27	002	982
2000	05	31	29	004	987
3000	06	32	28	004	010
4000	07	32	27	004	008
5000	08	32	28	002	007
6000	09	31	28	001	005
8000	10				
10000	11				
12000	12				
14000	13				
16000	14				
18000	15				

REMARKS

DELIVERED TO: RECEIVED FROM:	TIME (GMT)	TIME (LST)
MESSAGE NUMBER	DATE	
RECORDER	CHECKED	

DA FORM 1 JAN 71 3675 REPLACES DA FORM 6-57, 1 MAR 62, WHICH IS OBSOLETE.

Figure 2. Sample Ballistic MET message

CHAPTER 9

MOUT Live Fire!

by SFC Tony Husen

The platoon gathered for the assault on the objective. The platoon leader was already shaken by the experience; they had taken a wrong turn in moving to the assault positions. He was not the only one with problems. The machine gunners were tired and they had not even started the attack. Nevertheless, they moved into position. On signal, the support-by-fire position suppressed likely enemy positions to cover the initial breach. Their fire drew a response that surprised them as well as the platoon leader. A single-story house that had appeared relatively innocuous on the flat terrain model actually sat on a low hill dominating the assault position and the support-by-fire element. This attack was going nowhere.

Military operations on urbanized terrain (MOUT) are a tremendous challenge to all. The synchronization as a combined arms team is obviously paramount. That is easy to say and much harder to achieve. Problem solving and self-discovery in training for MOUT will always be challenging. But as is always the case, it is better to tackle those issues in training, using tactics, techniques, and procedures (TTP), than in combat.

Phase One: Planning and Rehearsals

As in any operation, planning and rehearsals are the keys to MOUT Live Fire at JRTC. Platoons that make the most of their planning and rehearsals do the best in the exercise. The effort to construct accurate terrain models is time well spent. All too often units use simple hasty sketches, and they fail as a result. Soldiers need the three-dimensional view that a terrain model offers to grasp the complexity of MOUT. Such models should be as close to scale as possible. These physical representations lead to better wargaming. They serve as an informal platoon-level intelligence preparation of the battlefield (IPB). By seeing the problem in three dimensions, leaders are able to be more creative in solving it. But a simple model of the buildings in an area is not enough. Very few urban areas are built on flat ground, but many units at JRTC ignore the terrain when constructing their terrain models. A one-story building set on a hill may command a multi-story building on low ground, but such urban key terrain is not apparent on a flat terrain model.

TTP: Take the time to build a terrain model that shows not only the buildings and their relative positions, but also their positions in relation to the terrain.

Platoon rehearsals should be equally painstaking. Like any other mission, a key leader rehearsal should be done first before a platoon-level run-through. In most cases, the rehearsal site will not mirror that of the objective. That can be offset during multiple rehearsals by changing the direction of attack and the rooms used. This keeps the soldiers from fixating on the physical layout of the rehearsal site. Instead they are forced to concentrate on their actions and on TTPs. These variations increase the flexibility of the teams and squads if they have to fragmentary order (FRAGO) a plan. They also exercise and test the communications setup for the operation. Platoons using ICOM radio sets mounted in Kevlar helmets (K-Pots) were much easier to command and control.

TTP: If the rehearsal area is different from the actual objective, change the direction and rooms attacked between rehearsals. Concentrate on the methods (TTPs) versus the physical layout of the rehearsal site.

One of the keys to simplifying planning and rehearsals is the development, distribution, and use of effective platoon standing operating procedures (SOP). Many of the units at JRTC do not have established SOPs for the complex TTPs necessary in MOUT. Of those who do have SOPs, many were just published before the unit deployed. Soldiers have not had the opportunity to study, much less practice, those SOPs, rendering the platoon less effective than if it had no SOP at all. For the few units that do come to JRTC with established SOPs that have been exercised at Home Station, the problem is generally adhering to those procedures once they begin the MOUT Live Fire. That adherence becomes even more important when the SOP offers too much free reign to deviate at squad level in critical areas. This can lead to confusion when the team leader suddenly becomes the squad leader. Issues, such as sectors of fire in a room, use of infrared (IR), or hand and arm signals when stacking, must be worked out ahead of time and should be standardized. This standardization is absolutely critical when it comes to the use of night-vision goggles (NVG), IR, flashlights or Sure-Lights when clearing and searching.

TTP: A well-rehearsed and tested platoon SOP is a solid foundation for MOUT Live Fire. KNOW your SOP before you come to JRTC!

In planning for MOUT, platoons cannot overlook adjacent unit coordination, whether with a sister platoon or a company. Such coordination includes restricted fire lines, mutual support for direct fires, and smoke. All too often platoons neglect this vital coordination and approach the MOUT Live Fire as if they were fighting in a vacuum. This need for coordination also applies to support as well. Infantry and engineers need to have good working knowledge of each other's jobs in case of casualties. This cross-training will help sustain momentum.

TTP: Don't forget adjacent unit coordination! MOUT Live Fire is a platoon exercise set in a larger operational context.

Phase Two: Movement to the Objective

The next phase of the MOUT Live Fire is the movement to the objective. Generally overlooked in planning even by units that use IPB, terrain analysis of the route can prove critical to secure and speedy movement. Soldier loads can cripple a unit's effectiveness even before they reach the objective. That is especially true of machine gun teams that are not cross-leveled appropriately. Everyone needs to know who is carrying mission-essential equipment. Units exhibit inconsistent use of NVGs among personnel. Accidental triggering of PAQ-4s and mounted white lights on weapons happens all too often, disclosing the unit's movements. On the other hand, many units do not capitalize on multiple uses of their surveillance, target acquisition, and night observation (STANO) equipment. For instance, a PAQ-4 can be used to designate or identify a route, breach point, or position location for break in contact.

TTP: Movement to the objective should be planned. That means studying the route as part of IPB.

Phase Three: Assault to Clear the Objective

The assault to clear the objective is the culminating phase of the MOUT Live Fire. Platoons should consider the elements of maneuver as they enter this phase. These elements are commonly violated at JRTC. Soldiers and units should maintain awareness of their location in the built-up area. Situational awareness begins with knowing where you are. Reaction to enemy contact must be decisive and quick. Casualties need equally responsive buddy aid. They should be moved from open areas with proper covering fires.

TTP: Don't forget the basics -- overwatch, obscure, and maneuver!

The initial forced entry of a building is a critical step in the MOUT Live Fire. Platoons tend to focus on this and often fail to maintain internal security on location when conducting breach. Well-thought-out planning and SOPs will speed the process; techniques are only limited to the imagination of the leaders and on available resources. Breaching can be explosive, ballistic, or mechanical, depending on what the platoon has at hand. Platoon leaders need to exercise strong control over use of IR and white light discipline during initial entry. If too many members have IR on, they may blind each other. The same holds true for the use of white light, as too many members do not understand when white light goes on or when it is to be shut off.

TTP: Maintain local security during initial forced entry!

Room clearing is an intricate dance of death; the art of it is making sure the bad guys are the ones who die. First and foremost: Stay out of the fatal funnel! Do not get hung up. Team members need to follow through to support dynamic entries and clearing. This will limit congestion at this funnel. Room clearing is a team effort; one man should never attempt to clear a room by himself. Leaders should ensure teams adhere to assigned sectors in the rooms. As personnel and situation allow, drop security along the way in rooms. Soldiers pulling security should be on NVGs, which are commonly overlooked at JRTC. They must remain aware of where "friendlies" are as they cover doors and windows. The unit should avoid having a large group of soldiers in any room. Such congestion limits their effectiveness, wastes manpower, and offers a lucrative target. Units should maximize the use of attached engineers, especially for obstacles and booby traps. Such defenses should be neutralized, bypassed, or blown in place. Platoons should apply suppress, obscure, secure, and reduce (SOSR) on known obstacles and in-stride breaches for unknown obstacles.

TTP: Congestion is a killer! Move according to rehearsed roles!

Searching is a parallel operation to clearing. Understand that clearing a room or building of hostile threats must be done first prior to searching. Units should have a systematic approach for searching rooms. That system should be rehearsed, and leaders should make sure that the unit adheres to it. That may sound like common sense, but it is a common problem at JRTC. The same holds true with white light and NVGs with IR mode. There are various techniques and they need to be rehearsed.

TTP: Clear the room before you search it!

Cross-talk between squads and platoons is critical to success and safety. The standard is to paint a picture for others. The first encounter with obstacles and booby traps is something everyone needs to hear. Leaders should demand and pass situation reports (SITREPS) and ammunition, casualty and equipment (ACE) reports. Cross-talk can highlight the need for engineer support and describe the support needed. Information on enemy resistance should be shared. All such cross-talk will help the platoon leader formulate decisive FRAGOs as conditions change.

TTP: Disciplined cross-talk keeps everyone aware of what is happening and what is likely to occur next.

Soldiers in a support-by-fire (SBF) role or a weapons squad play a critical role. They should maximize their use of NVGs, ground commanders pointer, AIM-1 DLR laser, and any other targeting tool. Assistant gunners need to designate existing enemy threats and anticipate where other threats may appear. They must forecast ammo consumption and plans for ammo redistribution, or request squad automatic weapon (SAW) for backup as needed. The squad leader should exercise definite fire distribution and control using abbreviated fire commands and laser designating. Consideration should be given to illumination for the SBF role with the assaulting element in mind. If illumination is used, it should be coordinated.

TTP: Support by fire also means support by observation.

Preparing for the MOUT Live Fire at JTRC: A Summary

The following are some platoon-level recommendations for preparing for the JRTC MOUT Live Fire. First understand that a well-thought-out and exercise-validated platoon SOP will correct most challenges described above. All platoon members need to have a full understanding of what is negotiable or what may be deviated from in the platoon SOP. This provides positive and proactive platoon leadership. As simple as this sounds, it is a common problem at JRTC. A platoon MOUT-specific training program for reflexive and discriminating firing techniques is excellent preparation. The units that conduct this training -- dry and live fire -- do the best at JRTC. Communication and initiative at all levels in the platoon will "bubble up" fresh ideas on field expedient markings, breach techniques, gaining high entries, or any number of TTPs. Develop a MOUT leader course at brigade or battalion level covering rifleman duties to company-level TTPs to demonstrate the overall mechanics and challenges.

TTP: An SOP is not an SOP unless everyone in the unit understands it.

Make training as realistic as possible. Provide typical furniture and room clutter during room clearing training. Constant sterile rooms give a false sense of room clearing for soldiers (day and night) during trainup. If the scenario says the building is damaged, there should be obstacles to raise soldier awareness to potential problems. Troops and leaders should understand weapons' effects on buildings and rooms in the defense and the offense. That includes buildings of different material structures. This is especially true of anti-tank (AT) weapons in considering oblique firing as opposed to shooting perpendicular, overpressure, or density on corners of masonry buildings. Platoons should train to take maximum use of environment materials such as furniture, ladders, supplies, or makeshift litters during mission requirements. On building and room security, practiced SOPs work. Place men at critical doors, hallways, and windows. Ensure they have NVGs if night operations are expected. Recess weapons away from doors and windows, keeping in mind the effects on fields of fire. Use furniture or any other heavy items for cover inside the room or building. Strong point men at critical places if the element has sustained casualties or is undermanned.

TTP: The urban environment affects weapons dynamics just as it does movement, concealment, and cover.

There is no "correct way or straight answer" for room clearing as far as NVGs vs. white light vs. IR systems. It is all a question of what is practical, available in equipment resources, and useful for the platoon. Proficiency of the unit with equipment available is a factor as well. Do not rule out commercial items that units can purchase, such as Sure-Lights, pressure switches, or 600-round machine gun bandoleers. A few hundred dollars spent by the unit at Wal-Mart or Radio Shack can very well dictate a unit's success or save lives. Experiment with a few items, then justify their use through the S4/commander channels. STRICOM has a great program called ID/IQ (Indefinite

Delivery/Indefinite Quantity) to help ease the pain of searching for commercial items. The same is true on the proper use of smoke. It is a recurrent problem, and there is no absolutely correct answer. Smoke is a doubled-edged weapon if not used correctly.

TTP: Get your STANO and special equipment procedures down BEFORE you arrive at JRTC.

The MOUT Live Fire demands specific marksmanship and safety measures. Machine gun teams should practice traverse and elevation (T&E) manipulation drills with a self-made "worm board" for target acquisition with laser mounted and NVG use. Close quarters marksmanship is critical. Apply a sound and realistic marksmanship program. Think "precision" MOUT, not "surgical" MOUT. Soldier protection is equally important. Hearing protection is mandatory and eyewear is at the unit's discretion. Soldiers need to wear gloves and pads for elbows and knees. Body armor at Level III is recommended. A Kevlar vest is the minimum. Soldiers should wear ballistic plates in front for combat (threat in front of soldier). Ballistic plates in back should be worn in training for threat of accidental discharge. Plates are not required for training using 5.56mm SRTA ammo during live fire.

TTP: MOUT is a precision drill, not a surgical operation.

The bottom line in preparing for the MOUT Live Fire is just that: preparation. Platoon SOPs, training, and rehearsals at Home Station are all necessary. Conducting these steps will allow the platoon to concentrate on the operational problems presented at the JRTC MOUT Live Fire using its established TTPs. Precision can only be achieved through practice. **k**

CHAPTER 10

Observations on the 60mm Mortars at the Joint Readiness Training Center

by SFC Allen Ness

The enemy infantry paused briefly in the defilade below the small rise before continuing the attack against the American infantry company set in a night defensive position along the next hilltop. The enemy's pause in their final tactical assembly area allowed the Americans to target the company mortars against them. Sixty millimeter spotting rounds slammed into the area, followed by a full fire for effect. Screams and flashes confirmed that the light mortars were hurting the enemy -- badly. Yet even as hopes rose that the mortars might break the attack before it started, the fire suddenly dwindled then stopped as the mortar teams ran out of ammunition.

Why 60mm mortars?

"The value of the 60mm mortar in the offense does not lie in its volume of fire or its continuous fire support. The mortar section's best contribution to combat success is its immediate responsiveness to the company commander's orders and the speed at which it can be brought into action."(**FM 7-90, *Tactical Employment of Mortars***, p. 8-10) Assuming that the crews have sufficient rounds on hand to accomplish the desired effects, the deciding factor then becomes their speed of employment, usually a question of technique and training.

Conventional fire control

At the JRTC, company mortars rely almost solely on fire under a fire direction center (FDC). While this allows massing of the two guns' fires and increased force protection levels for the crews, the time required to bring accurate fires to bear often results in canceled missions. Speeding up this conventional mode with an FDC depends on in-depth fire planning, especially when the unit is moving. One effective technique is to plan targets at 400-500 meter intervals along the route, preferably on recognizable terrain features. The mortar teams lay their tubes on new targets as the platoons travel along the route. Upon contact, the first round leaves the tubes within 10 seconds of the initial request. The element in contact then calls in a standard adjustment, direction to the target, deflection correction, and range correction (left/right, add/drop). Accurate rounds are on the way within another two minutes. Units must train for this two-minute window. Otherwise, the element in contact might maneuver forward in the interim and become intermingled with the enemy. Units may actually pull back while suppressing the target until the mortars weigh in. Every member of the platoon should be trained in adjusting fires from planned targets, and they must know what target is active. This technique allows every infantryman to fight a combined arms fight.

Hand-held fires

Another technique is the 60mm's hand-held mode without an FDC. In this method the mortar or mortars travel at the rear of the platoon, or lead platoon if the entire company is moving. The large base plate and bipod can be left

with the company rear, allowing the section to carry more ammunition. At first contact the mortars assume an overwatch position and engage the enemy as part of the support element. The mortar teams or the support element leader can control the fire, directing the tubes to lift and shift as required. This dramatically enhances the mortars' speed and responsiveness to small unit leaders. It also, however, increases risk to the crew. They must be trained to think as infantry and take advantage of available cover and concealment. The 60mm mortar can be hand-held fired from the prone, but the crew must train using that position. The benefits to small maneuver units are immediate. A well-trained mortar crew can accurately fire 12-15 rounds a minute at ranges from 70-1,342 meters, which boosts the platoon's ability to gain fire superiority upon contact. The mortars can then, on command, shift fire to cut off the enemy's route of escape.

Rates of fire must dictate rates of supply

All of those theoretical advantages fly out the window, however, if the unit does not carry enough ammo. Companies routinely begin a JRTC rotation with 80-100 rounds of 60mm ammunition and seldom receive a resupply. As a result, most companies execute the defense with fewer than 50 rounds. Target destruction is a common mortar task. Yet **FM 7-90** recommends firing 14 rounds of M720 ammunition just to suppress a platoon-sized target in the open with 10 percent casualties. Destroying that single platoon with 30 percent casualties requires ALL of the rounds most companies begin the defense with at JRTC. A dismounted infantry platoon is a common target in the defense, but most mortar sections have only enough rounds for one effective fire-for-effect mission. **FM 7-90** also recommends the basic load for the mortar section as 350 rounds. When broken down, this equates to roughly two rounds per man in the company. The remainder stays with the company vehicles to be brought forward as needed.

CSS battle tracking

Keeping the company topped off with mortar rounds relies on effective CSS battle tracking. This does not mean ordering a complete basic load when the number of rounds falls below 50 or any other equally arbitrary number. That only overloads the logistics system. Instead the section sergeant and XO can forecast the approximate number of rounds that will be fired daily and make that a standard part of the daily logistics package (LOGPAC). If the number actually delivered is over the number fired, the ammunition can be left in the combat trains or carried in the company vehicle until needed. This allows the company to maintain its initial load of ammunition and even increase it during the low-intensity conflict (LIC) phase. Once defensive sectors are identified, another basic load can be brought forward with the Class IV. Two 60mm mortars can fire one basic load (350 rounds) in 9 minutes of sustained fire.

Conclusion

"Keep 'em trained, keep 'em supplied, and keep 'em shooting!"

FM 7-90, quoted earlier, truly centers on the benefits of having company mortars. Yet taking advantage of those mortars means that units have to train on using ALL their modes of employment, then identify which modes are best suited for the particular tactical situation. Even with the best training, however, those highly skilled mortar crews become moderately well-trained infantrymen when they run out of rounds. The 60mm mortar is a handy weapon, deadly in trained hands with a basic load of ammo. Empty, however, it makes a poor club. **k**

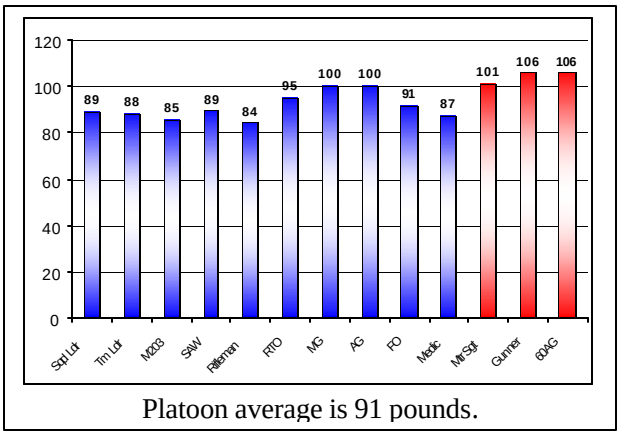
CHAPTER 11

Soldier's Load and Combat Readiness

by SFC Robert J. Ehrlich

Day seven at the JRTC and it showed on the faces of the young infantrymen. Typical central Louisiana weather in November, the nights were turning, often marked by heavy rains. The platoon sergeant worked hard to keep the troops motivated and moving under their combat loads. No one wanted to be cold or wet, so the rucks were especially heavy. With ammo, rations, and water, each soldier carried well over 100 pounds of gear. After seven days of constant operations, the effects of that weight were showing. Even the fittest of the platoon were hollow-eyed with fatigue. Their reactions were slow and their minds fuzzy. They rucked up and moved on toward their next mission, an attack on a suspected strong point five clicks away. Less than 500 meters into the movement, the tired point man missed seeing movement ahead as he cleared the edge of a small grove. The opposing force (OPFOR) ambushed the platoon with complete surprise. No one survived.

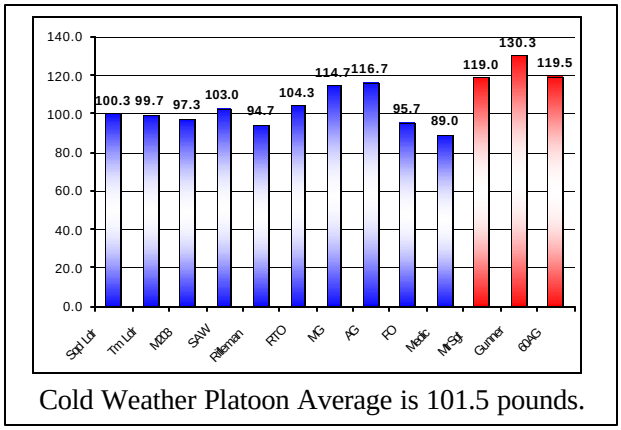
Fatigue is the infantryman's life in the field. Without rest or support, fatigue can reduce an effective unit to a leaderless gaggle even in the most benevolent terrain. With rough terrain and bad weather, the effects of fatigue multiply exponentially. The more hills you have to climb and the worse the weather, the faster you are going to tire. Physical training reduces that rate, but does not eliminate it. On the other hand, carrying too much weight accelerates exhaustion. This is common sense, right? Maybe so, but common sense does not always prevail.



Platoon average is 91 pounds.

Observation: The average rifle platoon soldier's load at the JRTC is 91 pounds.

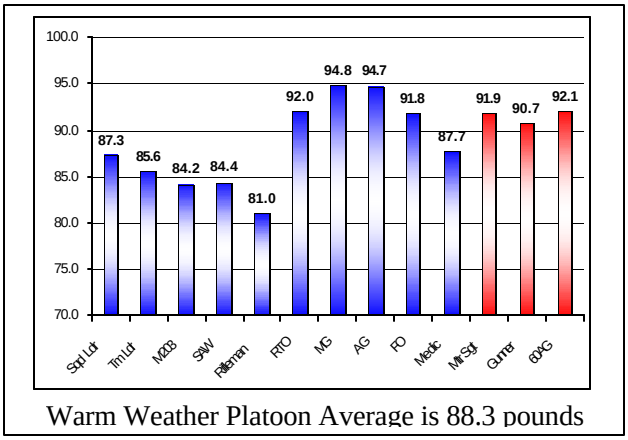
As shown in the chart above which analyzed 13 rotations, soldiers carry too much weight. Typically, each soldier is wearing or carrying at least load-bearing equipment (LBE), Kevlar helmet, weapon, and rucksack or assault pack. This average did not include battle dress uniforms (BDUs), T-shirts, socks, underwear, and boots.



Cold Weather Platoon Average is 101.5 pounds.

The average cold weather soldier's load is 101.5 pounds.

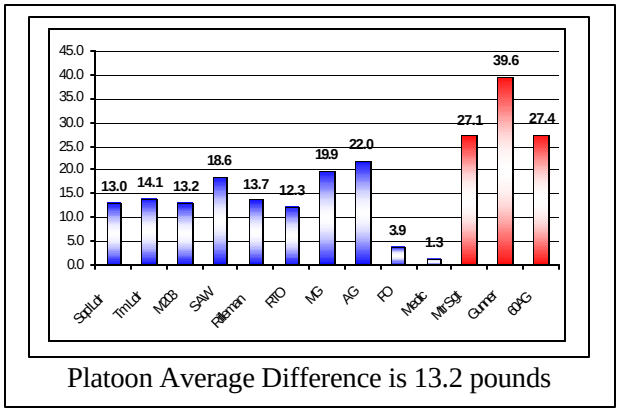
During cold weather rotations the weight of the rucksack increases. This is due to carrying extra clothing and cold weather gear. Increases in the load include poncho, rain gear, and Gortex gear. Again, basic soldier clothing -- BDUs, T-shirts, socks, underwear, and boots -- are not included.



Warm Weather Platoon Average is 88.3 pounds

The average warm weather soldier's load is 88.3 pounds.

During the summer months, the soldier's load is more manageable. The need for "Hawk gear" (often 20 pounds) goes away. However, much of that reduction is offset by the need to carry more water. As much as 75 percent of the soldiers at the JRTC carry "camel-bak" water pouches in addition to their canteens. Once again, BDUs, T-shirts, socks, underwear, and boots are not included in these weights.



Platoon Average Difference is 13.2 pounds

The difference is?

The average difference between cold weather and warm weather at the soldier level is 13.2 pounds. As you can see by the various charts, soldiers carry extremely heavy loads even in warm weather. That weight slows movement down and fatigues the soldier faster than if the platoon went into combat with a lighter load.

Why do leaders and soldiers consistently overload themselves?

That's a very good question and it has hampered light infantry (especially U.S. light infantry) operations for years. Load-bearing equipment, designed as a combat harness, goes back for hundreds of years. Everything else -- packs, rucksacks, and extra water -- is by definition comfort items added on top of the combat load. Those comfort items may make a soldier comfortably dead if he is too tired to function. Two of the biggest factors relating to soldier's load are:

1. Tailoring the load to the mission.
2. Soldier confidence in the logistical system.

Tailoring the load

Most everyone has seen the movie ***Platoon,*** where the squad leader in Vietnam reached into new guy Charlie Sheen's rucksack and dumped unnecessary equipment. Soldiers coming to JRTC need the same thing: leaders performing good pre-combat inspections (PCIs). The packing list should be tailored to the mission at hand, with all the extras and "nice-to-have" items eliminated.

Soldier confidence in the logistical system

Soldiers at the platoon level lack confidence in the logistical system. This has to be addressed at the company and higher level. When platoons request water and supplies, those requests must be command priorities. Effective CSS planning should forecast when those demands will arise. Emergency resupply, a reactive mode, should be the exception. That goes for all phases of operations. In the defense, for example, platoons should not have to wait for D-Bags, chemical gear, and platoon defense kits. They should get these critical items as soon as they begin preparations for defensive operations.

Long-term effects

Training soldiers not to rely on the logistical system trains the logistical system to perform at a substandard level. Yet to provide the support needed, logistical operators must have both the physical assets and the training opportunity necessary to perform their mission during operations. They also require support, especially security. Resupply vehicles should not go unescorted on the battlefield. Resupply and other logistical efforts are prime targets. Consider that:

1. To succeed, soldiers must be supplied.
2. Logistical back haul is often the mainstay for casualty evacuation.
3. Supplies lost to the enemy often sustain the enemies' operations.

An even more direct effect of overloading soldiers is the fatigue and stress on the soldiers themselves. Though the common sense rule of "the higher the load, the slower the movement" applies, it is often ignored. The effects can be more long term with an increased risk of back injury. Doctors in the Army even have a term for it – "Infantry back." Symptoms are low back pain, fatigued spinal muscles, back strains, or, in extreme cases, scoliosis (curvature of the spine).

If this isn't new, what does "doctrine" say?

FM 7-8*, Infantry Rifle Platoon and Squad*, 22 April 1992, Chapter 5, Annex I, says the following about soldier's load: *"Determing the soldier's load is a critical leader task. The soldier's load is always METT-T dependent and must be closely monitored. Soldiers cannot afford to carry unnecessary equipment into the battle. Every contingency cannot be covered. The primary consideration is not how much a soldier can carry, but how much he can carry without impaired combat effectiveness."*

The manual states that the soldier's combat load should not exceed 60 pounds. That limit combines the fighting load -- LBE, kevlar, weapon, and magazines with ammo weighing about 35 pounds -- and the approach march load rucksack and selected items at 22 pounds. Remaining equipment and materials needed for sustained combat operations form the sustainment load to be brought forward by company and battalion when needed.

The bottom line: Soldiers need a packing list that makes sense.

Carry what is required for mission accomplishment, but allow a minimum of comfort items. Train your CSS operators to make up the difference. Leaders, beginning at the team level, should conduct good PCIs to enforce that the packing list is adhered to. (A sample of a packing list is on page 6, including the weight of everything a soldier might wear or carry. In this suggested list, "worn" includes the uniform, boots, etc., not normally weighed during JRTC rotations.) There are four configurations with this type of packing list and load:

Fighting load - Only what is worn = 36.9 pounds
Fighting light - Worn plus the assault pack = 59 pounds
Approach march - Worn plus the rucksack = 72.9 pounds
Everything - Worn plus the rucksack and assault pack = 95 pounds

During JRTC rotations, the initial configuration affects the soldier's load average. Some units entered the box at fighting light (59 pounds), some at the approach march (72.9 pounds). Of the 13 rotations tracked, only one unit entered the fight at fighting load (36.9 pounds). Typically, summer rotations entered the fight at fighting light (59 pounds) or

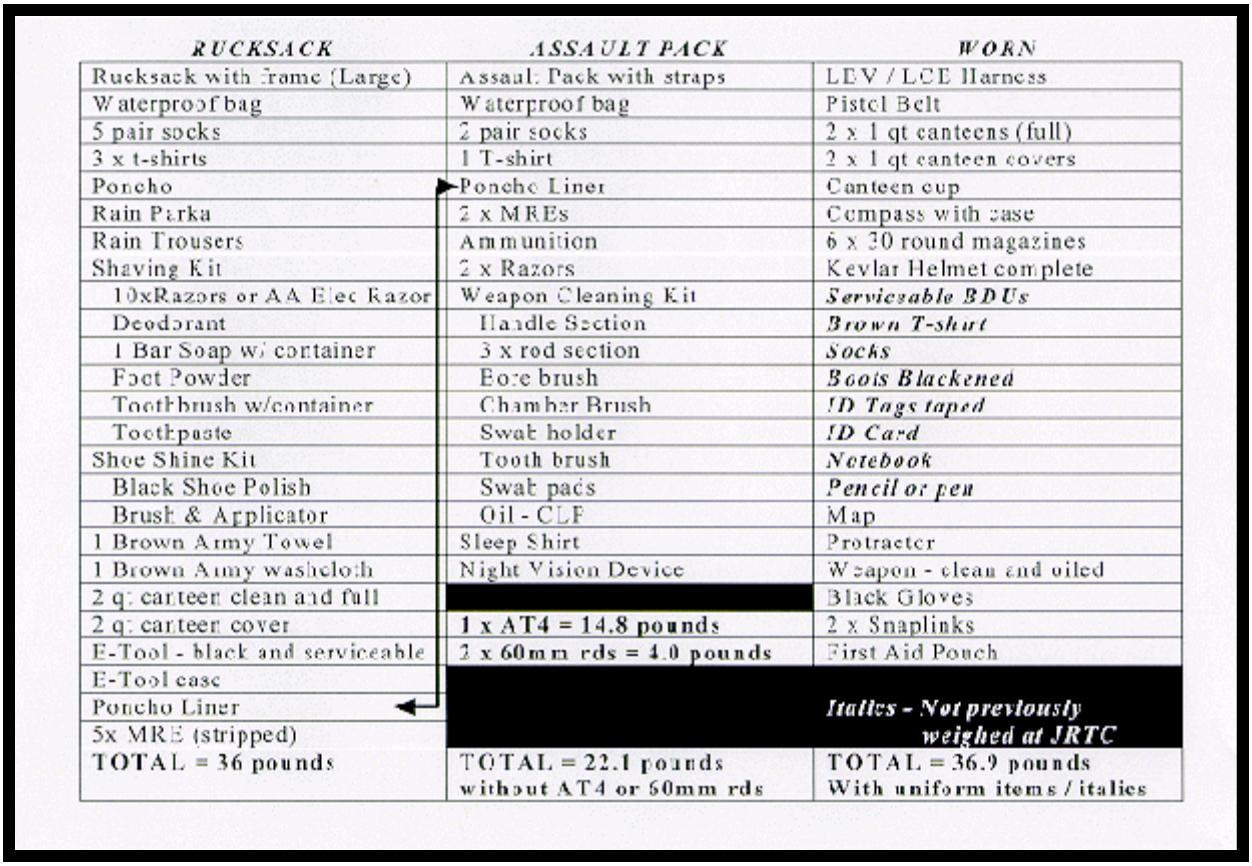
the approach load (72.9 pounds), and the winter rotations entered the fight either approach load (72.9 pounds) or everything (95 pounds). Putting this into mission, enemy, troops, terrain, and time available (METT-T) perspective, the summer rotations came into the fight between 30.1 and 52.2 pounds heavier than they should have been. The winter rotations came into the fight between 12.1 and 34.2 pounds too heavy. **The net effect was that units overloaded themselves so much during summer rotations that they moved like they were fighting in winter and risked heat injury in doing so.**

If a unit insists on the "bring everything" configuration, the best solution is to enter the area of operations, occupy an assembly area, and drop the rucksack. Continue with the movement and clearance of a sector with assault packs. Near the hours of darkness, recover rucksacks, move to a patrol base, and again drop rucks. Continue with night combat operations, ambushes, and patrols on assault packs. Recover the rucks at sunrise and move them to a new assembly area (AA) to repeat the cycle. Although still available, this avoids carrying the "everything" load in favor of tailoring carried loads to mission-essential items.

Conclusion: Common sense IS NOT commonly used! Be uncommon and use yours!

Consider the risk versus gain aspects of combat loading your soldiers. What are you risking when you configure your soldiers for combat? Answer: your mission and your soldiers. If soldiers have their mission-essential equipment, they may be uncomfortable at times, but they will be able to sustain their combat effectiveness. If soldiers are being overloaded and they collapse from the weight of comfort items, they may not even reach the objective. By overloading their men with comfort-related items, leaders are in effect expending them before they have the opportunity to achieve the mission.**k**

SAMPLE– PACKING LIST



RUCKSACK	*ASSAULT PACK*	*WORN*
Rucksack with frame (Large)	Assaul: Pack with straps	LEV / LCE Harness
Waterproof bag	Waterproof bag	Pistol Belt
5 pair socks	2 pair socks	2 x 1 qt canteens (full)
3 x t-shirts	1 T-shirt	2 x 1 qt canteen covers
Poncho	Poncho Liner	Canteen cup
Rain Parka	2 x MREs	Compass with case
Rain Trousers	Ammunition	6 x 30 round magazines
Shaving Kit	2 x Razors	Kevlar Helmet complete
10xRazors or AA Elec Razor	Weapon Cleaning Kit	*Serviceable BDUs*
Deodorant	Handle Section	*Brown T-shirt*
1 Bar Soap w/ container	3 x rod section	*Socks*
Foot Powder	Bore brush	*Boots Blackened*
Toothbrush w/container	Chamber Brush	*ID Tags taped*
Toothpaste	Swab holder	*ID Card*
Shoe Shine Kit	Tooth brush	*Notebook*
Black Shoe Polish	Swab pads	*Pencil or pen*
Brush & Applicator	Oil - CLP	Map
1 Brown Army Towel	Sleep Shirt	Protractor
1 Brown Army washcloth	Night Vision Device	Weapon - clean and oiled
2 qt canteen clean and full		Black Gloves
2 qt canteen cover	**1 x AT4 = 14.8 pounds**	2 x Snaplinks
E-Tool - black and serviceable	**2 x 60mm rds = 4.0 pounds**	First Aid Pouch
E-Tool case		
Poncho Liner		*Italics - Not previously weighed at JRTC*
5x MRE (stripped)		
TOTAL = 36 pounds	TOTAL = 22.1 pounds without AT4 or 60mm rds	TOTAL = 36.9 pounds With uniform items / italics

Radio set, machine gun tripod, Dragon, Javelin Sight, 120' rope, Skedco, CLS bag, and marking kit as appropriate.

Mortar, machine gun ammunition, and AT weapons cross-loaded as appropriate.

During cold weather, ensure soldiers pack poly-pro underwear, and Gortex jacket and trousers. Gortex jacket and trousers = 4.0 pounds

Other special items - airborne items (single point release harness, lowering line) = 3.5 pounds.

Total load of soldier with ruck, assault pack, LBE, K-Pot, weapon, and uniform would be approximately 95 pounds, not counting AT4, 2x 60mm rds, Gortex, airborne items, or poly-pro underwear. Bear in mind, the idea is to drop rucks and operate during patrolling with assault packs or the fighting load, then come back to rucksacks during hours of darkness and set up ambush sites or resupply for missions.